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Android magazine

» App reviews » Tips & advice
» Hardware tested » Hacking



REVIEW
**LG WATCH
URBANE**
Stunning
smartwatch
tested



ALL-NEW ANDROID WEAR

Taking the fight to the
Apple Watch with a brand
new look, features and apps



GALAXY S6 SECRETS
20 features that Samsung didn't tell you about

UNLOCK CHROME
Get early access to bleeding edge
browser features with Chrome Dev

**RUGGED
PHONES**
All-terrain Androids put
through their paces

REVIEW
LG G4
Is this the
phone of
2015?



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Hacks to mod Google Maps, get more
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Read our
review of the
leather-clad
LG G4
on page 62

Welcome

While the Apple Watch has dominated the tech headlines lately, the time has come for Android Wear to strike back. The LG Watch Urbane (page 74) is the first of a new generation of Android smartwatches that are taking high-end style seriously, with a rosegold metal watchface and genuine leather strap. It's no surprise then that the Urbane is also the flagship for Android Wear's biggest ever software update. This includes a slick new interface and new features, including Wi-Fi support for added independence and a unique way to send friends hand-drawn emojis. The update was initially exclusive to the Urbane, but is in the process of rolling out to all seven Android Wear watches. If you can't wait that long, Google has also overhauled many of its most popular apps, including Keep and Maps,

for deeper smartwatch integration. Discover all of Android Wear's new features and how to use them from page 18 onwards.

Speaking of Google apps, if you're fed up Gmail's 5MB attachment limit or think that YouTube would benefit from background playback, head to page 37. We'll show ten simple hacks to upgrade these apps, along with Play Music and even the Play store.

Also this issue, we have in-depth reviews of two of this year's hottest phones the LG G4 (page 62) and Samsung Galaxy S6 (page 66).

Jack Parsons

Jack Parsons
Editor



MEET THE TEAM

What's your favourite feature of the Android Wear update?



Jack Parsons
Editor

Being able to connect your smartwatch to Wi-Fi is a big game-changer for Android Wear and opens up lots of options for users.



Jamie Frier
Staff Writer

Android Wear's new wrist flick gesture control makes it so much easier to use hands-free and navigate between apps.



Siobhan Maguire
Production Editor

The emoji-doodling is a real plus for Android Wear. It makes sending your friends a message so much faster and simpler.



Adam Markiewicz
Senior Designer

My favourite thing about the update is that it debuts on the LG Watch Urbane, which is a really stunning smartwatch.

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CREATE LENS
BLUR WITH
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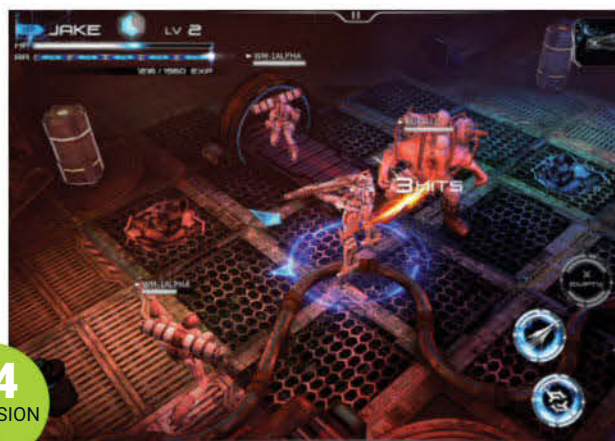
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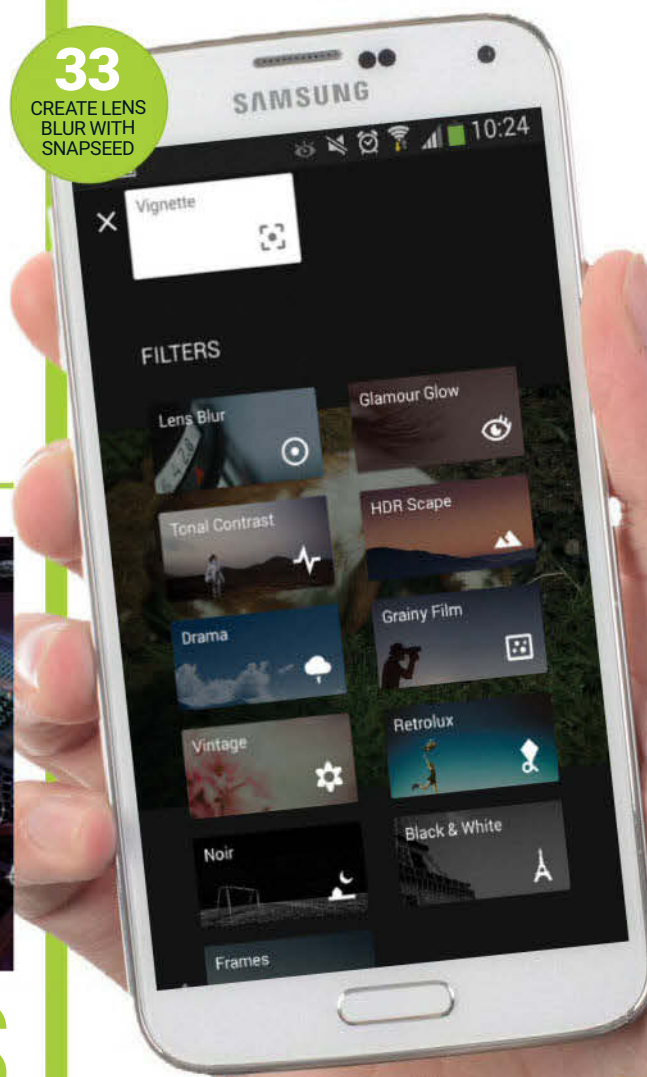
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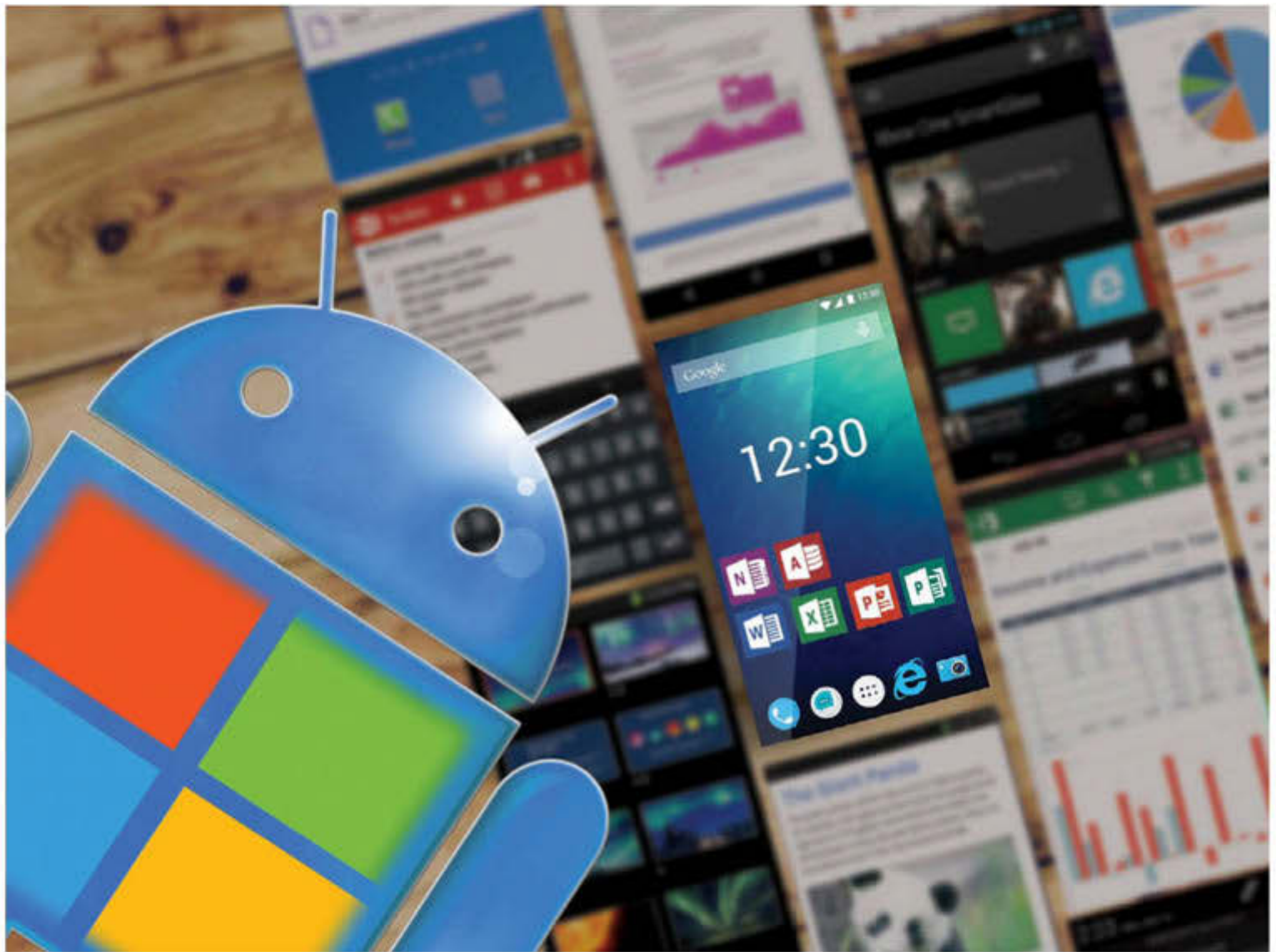
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IMPLOSION



20+ APPS





Does Microsoft want to steal Android?

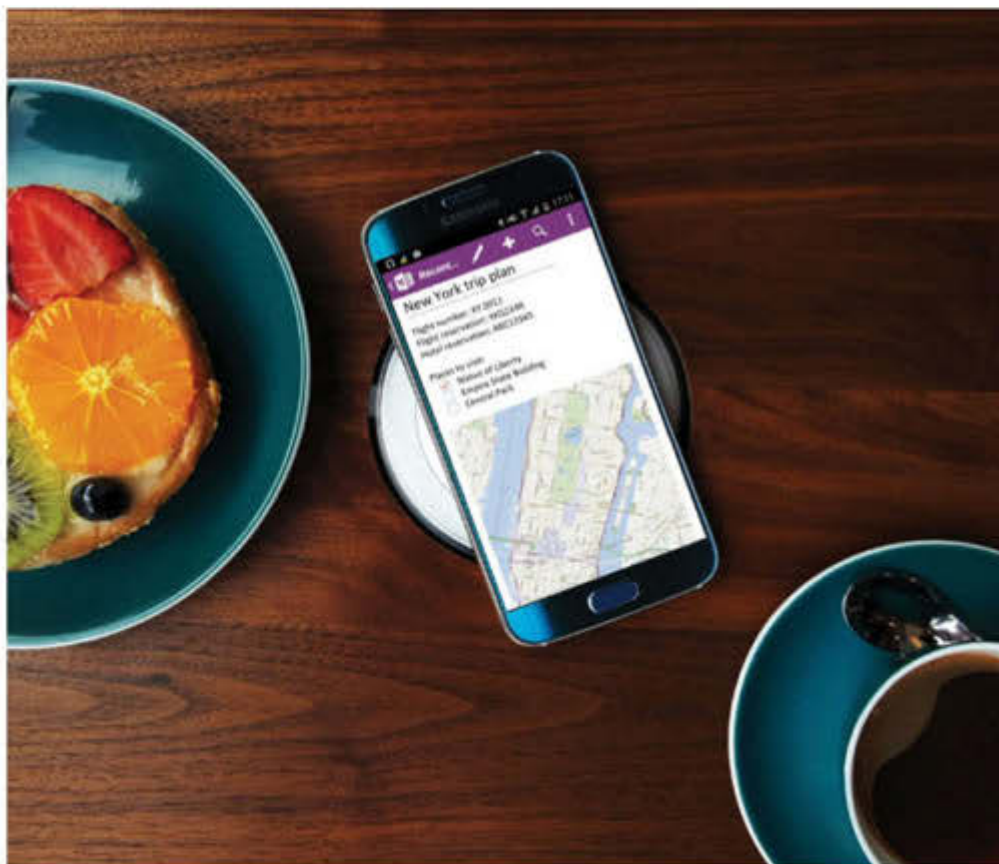
Deals with Cyanogen and Samsung suggest Redmond executives have their eyes on Google's most prized asset

Could Microsoft steal Android away from Google? At first the idea seems completely preposterous, but Android's open nature combined with Microsoft's eagerness to get a foothold in mobile, mean that the possibility is becoming more plausible with every passing week.

There are a few signs that show something is afoot: first, there's Microsoft's sudden eagerness to get its products on competing mobile platforms, including Office and (recent rumours suggest) Cortana. Then we have the deal the company recently struck with Samsung to have OneNote,

OneDrive and Skype pre-installed on both the Samsung Galaxy S6 and S6 Edge phones.

So far they are innocuous, but you can add Microsoft's recent partnership with Cyanogen to that — the alternative OS that gives you a more customised Android experience, from the underlying code to the apps for search, messaging and productivity that run on top. Google has always kept its own apps for manufacturers willing to run Google's version of Android, but Microsoft has the clout to provide a genuine set of alternatives (Outlook instead of Gmail, and so on).



The Samsung S6 and S6 Edge both come with Microsoft apps preinstalled

One final piece of evidence is Microsoft's announcement at its recent Build Conference that it is intending to make it easier for developers to port apps from Windows to Android (and iOS). With all these developments happening in the last few months, the threat to Google's dominance of its own OS is gaining momentum.

All about the apps

It's a significant shift for Microsoft and according to James Moar, Research Analyst at Juniper Research,

who says it's largely down to the new boss. "[Microsoft CEO] Satya Nadella is changing Microsoft into a platform company, rather than an operating system company," he told us — and that gives Microsoft more flexibility. "The end game is to get people buying into Microsoft services, not necessarily Windows."

So perhaps this is less a bid to steal Android and more an effort to get users onto Microsoft apps? Moar says he believes that Google will have to make a more concerted push into the business market to

"Satya Nadella is changing Microsoft into a platform company, rather than an operating system"

James Moar, Research Analyst, Juniper Research

keep up with competitors.

"The biggest threat [to Google] is the mobile enterprise synergy, which will likely increase with the launch of Windows 10," says Moar. "Google's services in this space — Gmail, Docs, Drive, Hangouts — need to answer enterprise needs, particularly security. It also needs to change its image, which is currently very consumer-focused in its messaging."

For Geoff Blaber, mobile and tech analyst at CCS Insight, it is also about Microsoft spreading its wings. "Microsoft has to ensure that its core apps and services are available as broadly as possible across a wide range of devices and platforms," he told us. "Its partnership with Samsung and Cyanogen and the moves to deliver iOS and Android versions of key apps such as Office is an acknowledgement of the shift towards Android and iOS."

And should Google be worried? "Google is unlikely to be concerned about Microsoft's moves specifically, but the growth of Android device shipments that do not feature Google services is a much bigger problem as Google doesn't receive revenue or data points," says Blaber. "To date, this has largely been limited to China but moves from Cyanogen and others such as Tencent and Alibaba, is likely to see this grow in other markets." ■



Microsoft's HoloLens AR technology will project floating app windows into your home

Is HoloLens the new Google Glass?

Tech giants like Google and Microsoft are competing against each other on multiple fronts — and one of those is virtual reality. Google has initiatives such as Glass and Google Cardboard, but Microsoft has been showing off a futuristic headset of its own in the form of HoloLens.

HoloLens is more augmented reality (a digital overlay on top of the real world) than virtual reality (a completely self-enclosed digital world). In a demo at the Build Conference, Microsoft engineers showed how HoloLens could enable you to play Minecraft on your table, throw up a movie screen on your wall, or have a Skype video call floating in the air in front of you.

We don't know when this exciting, futuristic technology will go on sale, but there are no end to the possibilities. Imagine piloting a robot around a room just by pointing, or having cooking instructions float in the air in front of you. In virtual reality as in mobile, Google is in a battle to keep up with the pace.

Mobile networks plan to block all online adverts

European mobile carriers plan to take the shine off online advertising with network-wide ad-blocking



Mobile operators may be planning to block online ads from appearing in your phone's browser and apps. A report by the Financial Times says an executive at a European carrier has confirmed that it and several of its peers are planning to start blocking adverts this year.

The software is developed by Shine, an Israeli startup, which enables mobile networks to filter out ads provided by Google and others. While it also works with app adverts, it can't block 'in-feed' ads, such as appear on Facebook and Twitter.

Shine is partially funded by Horizon Ventures, the investment fund of Li Ka-shing, Asia's richest resident. Mr Li also controls Hutchison Whampoa, one of the world's largest telecoms groups, which owns the Three network.

Roi Carthy, chief marketing officer for Shine, confirmed to **Android Magazine** that the Financial Times article is accurate, but declined to say which networks they are working with. A spokesperson for Three also said that they were not working with Shine.

Shine argues that online advertising has gone unchecked, with obstructive banner ads and cookies that collect data. It also costs mobile

users money. According to Shine, pop-ups, auto-playing videos and other forms of digital advertising can consume 10-50 per cent of a mobile subscriber's data plan monthly.

"Shine champions consumers' right to choose to block ads on mobile, as they can do on desktops," said Roi Carthy. "We do not believe this right impedes innovation."

However, this is exactly what Shine's critics accuse it of doing. A spokesperson for Google, which makes the lion's share of its money from advertising said: "People pay for mobile internet packages so they can access the apps, video streaming, webmail and other services they love, many of which are funded by ads. Google and other web companies invest heavily in developing these services — and in the behind-the-scenes infrastructure to deliver them."

An independent report by Cambridge University in 2012 found that 73 per cent of Android apps were free and, of those, 80 per cent relied on advertising as their main business model. With the number of apps on the Play store swelling, it's highly likely this figure has now increased.

Currently there are some 144 million people

around the world who are active ad-blocker users, a number that grew 70 per cent between 2013 and 2014, according to PageFair and Adobe. The report says this growth was driven by Google's own desktop Chrome browser, on which ad-blocking penetration nearly doubled during this time.

The unnamed carriers would not be the first European firms to embrace ad-blocking. In 2013, a French internet service provider, Fresh, attempted to block online ads in a firmware update to its router, but was stopped by the government. ■

Block ads with apps

Say goodbye to spam push notifications and privacy invasions with these downloads

Ad-Network Scanner & Detector

» Price Free » Android 2.1 and up



Ad networks are insidious and it's often very difficult for users to know exactly which app is responsible for any given ad. This free download from Lookout Security scans all of your apps and tells you what type of ads they display and what info they are collecting on your device.

AdBlock Browser Beta

» Price Free » Android 1.6 and up



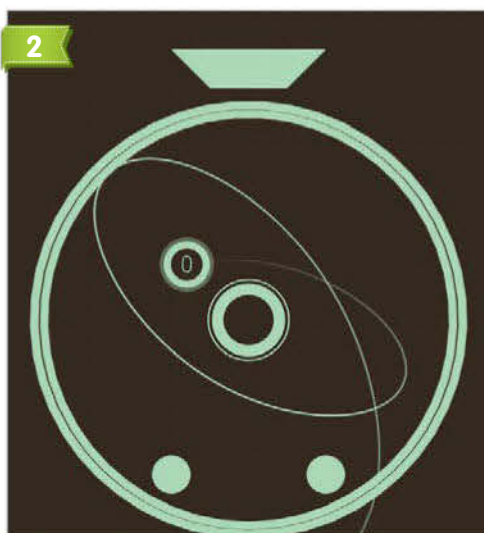
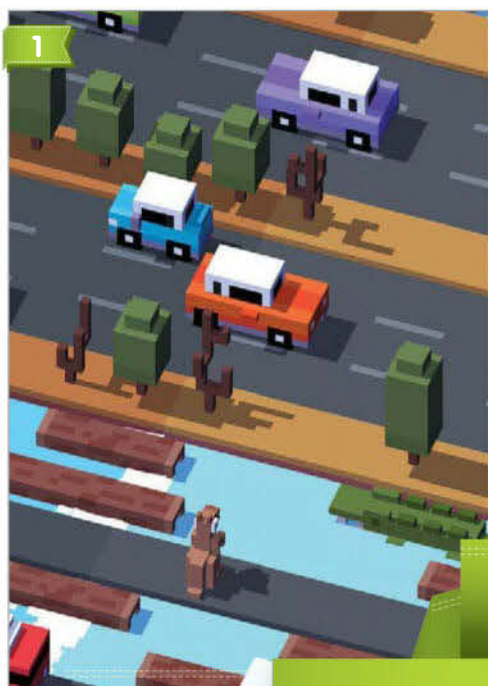
One of Chrome's most popular extensions has now launched its own dedicated mobile browser. It is currently in public beta, so you can't download it from the Play store. Instead, join AdBlock's Google+ community page (<https://goo.gl/jfvv8y>) and you'll be able to download the APK onto your phone from there.

AdBlock Plus

» Price Free » Android 3.1 and up



If you'd like to block ads, but prefer not to stop using Chrome, download the official AdBlock Plus app. Once again, it's not available from the Play store, so to get it, open your Settings, tap Security and then enable Unknown sources. Then open <https://goo.gl/kA6qg> on your phone and press download to install the app.



GALLERY OF... FIVE MINUTES OF FUN



1 Crossy Road

With gorgeous graphics and addictive gameplay, the aim of Crossy Road is to escort assorted animals across the road while avoiding oncoming traffic. It's also split up into chunks, so you can enjoy it in short bursts.

» Price: Free + IAPs

2 ULTRAFLOW

A highly original game, each self-contained level of ULTRAFLOW has you bouncing a ball off various walls to reach your target. Though this is a simple concept, this is one of the most diverting and challenging puzzle games we've seen.

» Price: Free

3 Snow Roll

Snow Roll has everything that you'd want from a game that you can dip in and out of: game mechanics that are simple to grasp but difficult to master, increasingly difficult and constantly changing levels, and a quick turnaround time.

» Price: Free

4 MORTAL KOMBAT X

If you fancy a fight to the death, try MORTAL KOMBAT X. One-on-one and multiplayer battle are just a tap away in this mobile-version of the console game. As well as being gory, fights are hyper-kinetic so don't last long.

» Price: Free + IAPs

5 Monument Valley

As endorsed by President Underwood in House of Cards, if you need an escape from day-to-day life, try the world of Monument Valley. Guide a princess through impossible architecture and uncover hidden paths.

» Price: £0.49/\$3.99 + IAPs

6 Does Not Commute

This puzzle-driving game hybrid requires you to steer cars around a small town one after the other. But when you start a new car, find a path that avoids your other vehicles as they replay the routes that you just drove.

» Price: Free + IAPs

NEW TECH | Intelligent Android hub

EmoSPARK

We get a close look at the companion robot that wants to be your friend

Despite the warnings of Elon Musk and Professor Stephen Hawking, the race to create a truly intelligent robot is still progressing. The latest technology to join the party is the Android-powered EmoSPARK. However, its creators say this home hub is more Her than HAL 9000, as this artificial intelligence can even recognise your emotions.

Ask it a question via the Android app on your phone and the home console draws information from Wikipedia and Freebase to answer your every question, much like Amazon's Echo or Microsoft's Cortana personal assistant.

However, its main draw is the voice and face recognition. As soon as you turn it on, EmoSPARK starts to make a bond with one owner, who it becomes attached to for life. It uses voice recognition software to read the tone of your voice and a camera to check your facial expressions and determine your mood.

Over time, EmoSPARK learns your likes and dislikes and should be able to have proper conversations with you. It's still in its very early stages and there are a few bugs to work out, but this could prove to be an interesting, if not massively useful, gadget.

Create a bond

Other people are able to use EmoSPARK as well, but it will only ever bond with one person, so make sure the first interaction it has is with the person for whom it is intended

Positioning

Place the cube next to your TV and plug it in so you can see search results on the screen. This is also where EmoSPARK recommends you place the camera as it's the most likely spot that it will be able to see you

Emotions

EmoSPARK also experiences emotions. If you are horrible to it, it begins to register negative feelings but works to make you, and itself, happy again by playing music or showing pictures it thinks you might like

At a glance

- » **Product name** EmoSPARK
- » **Available from** www.emospark.com
- » **Price** £203/\$315 without camera, £243/\$375 with camera

AI search device that you can have a conversation with and will learn your moods and habits

Specifications

It uses Android 4.2, runs off a Qualcomm quad-core processor and has 2GB of memory built in. The language software is produced by Nuance and it uses complex algorithms to understand questions and respond

Q & A



We spoke to Brian Fitzpatrick, a key investor in EmoSPARK, about the cube's sense of humour

Can you explain what EmoSPARK does?

A The purpose of EmoSPARK is to create a home-based artificial intelligence device that will use emotional intelligence from the user as well as the device itself, to create a better experience for users when working online by having conversations.

How do you form a relationship with it?

A You give the device your name, create a name for it and that should start a bond. As time goes on, with the use of the IP camera, the AI can learn from your expressions what makes you happy or sad, what is liked and not liked. If the cube says "Hey Brian, what's up dude?" and it gets a confused face, it will create a more formal conversation style.

So is the individuality the key point here?

A Yes, that it's versatile enough to understand how different people react to situations. To try and programme that in is difficult. Many companies try to programme it once and make that work for everyone, and that's a big issue. We're trying to create a platform that can make an individual profile for everyone. It could understand sarcasm, but if not it will tell both us and you it doesn't understand and will learn from that.

Would you need to carry it around with you?

A No. It's a home AI. We want it to stay in your living room. It hooks up to your TV and returns information via your television. The portability of it comes from your phone. Wherever you are, you can ask it a question through your phone, it speaks to the cube over whatever internet connection is available and returns an answer almost immediately.

How does it compare to the likes of Amazon's Echo?

A Most of these devices are script based. You ask a question, it returns an answer. While it's important you protect the integrity of the information, that's a bit cold. Humour is very subjective but we're trying to inject more humour into the interactions.

What about security?

A The device is very secure. It will respond only to your voice and your PIN code. The chip is stored on the device itself so it is unhackable from outside. Also, we have made three promises. The cube will never access your data without permission, it will never share anything without permissions and it will look after your best interests. We have taken the three laws of robotics and applied them to social media.

Get in touch
Do you think tablets are dead? Let us know!



1 Widescreen TV

With services such as Netflix, Sky and Amazon Prime available for mobile devices, tablets are perfect for watching television on the go, as they're big enough for two people to gather round without being cumbersome.



2 Working 5 to 9

In our 24-hour society, working 9 to 5 and going home to relax is fast becoming a myth. Tablets are easy to work on whether you're commuting or on the sofa, especially if you attach a keyboard.



3 Looking professional

If you're giving a presentation, taking your notes from a tablet is ideal. Papers can rustle and be scattered, while reading from a phone looks unprofessional. A tablet has the readability of paper and the slickness of a phone.



10 One-time purchase

Even if you pay for a smartphone, you then have to go on paying £20-40 a month for up to two years. A tablet is a one-time purchase and then doesn't have to cost you a penny unless you use 3G.



9 Big battery

It's very frustrating to be on a long journey and discover that whatever game you're playing or app you're running has completely drained your phone's battery. Tablets can easily eke out twice the battery life of the average phone.



4 Ultimate power

Just as a basic desktop PC is more powerful than many laptops, even low-end tablets have the processing power of top quality phones. That means you can perform much heavier tasks on a tablet than a phone.



5 Gaming giants

If you find yourself with a bit of spare time and want to settle down with a game, the combination of a large screen and powerful processor makes the tablet an excellent gaming device, especially for racing games and MMOs.



8 Who needs calls?

As much of our communication these days seems to be via messaging apps such as Whatsapp and Snapchat, the requirement for texts and phone calls is rapidly becoming much less important. Add in Skype, and a tablet could even totally replace your phone.



7 Cheap and cheerful

Even the very cheapest laptop will be the price of a mid-range tablet and you're going to get a much better all-round user experience from the latter.

Quality wise, you will gain something that is long-lasting and can accommodate pretty much all of your needs, for very little money. Add in the ability to take your tablet everywhere and you'll never look at a laptop again.



6 Reading

When reading a book or following directions on a phone, you generally have to choose between squinting or moving the page every 30 seconds. Tablets enable you to read an e-book or map in a much more user-friendly way than a phone.





ALL-NEW ANDROID WEAR



LG WATCH URBANE

Read our review of the first phone to get updated on page 74

Taking the fight to Apple Watch with a brand new look, features and apps

The launch of the Apple Watch back in April was a majorly hyped affair that drew the eyes of technology journalists from around the world. Following the event, what drew the attention of those technology journalists was that pretty much all of the Apple Watch's flagship features, such as doodles, Apple Health and Passbook, could already be done on most Android Wear devices for a fraction of the cost.

Not content with just matching the Apple Watch, Google then announced a raft of new updates for Android Wear, pushing it even further in front of its main rival. These updates have been welcomed by the Android community as they have addressed many of the major concerns people have with smartwatches, namely their reliance on the paired smartphone, the user interface and gesture

controls. With the likes of the Moto 360 and LG Watch Urbane pushing the envelope in terms of design and aesthetics, it seems like Android Wear has finally got its act together and should soon be pushing for overall supremacy in the smartwatch market, despite the Apple Watch's initial sales surge. Read on to discover how to make the most of these new, exciting features.



Leave your phone at home

Free your smartwatch from your phone with Wi-Fi support

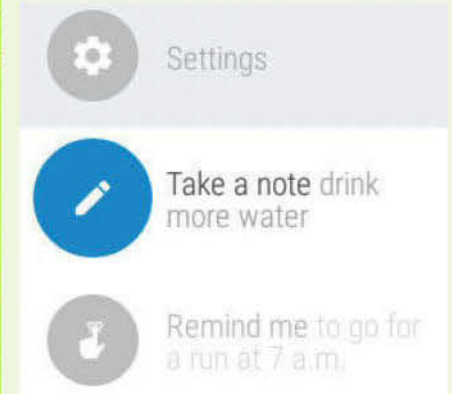
One major issue for those considering buying a smartwatch is how useful it actually is. The fact that you always had to have your phone in your pocket for it to work put a lot of people off. However, this is about to change.

The new update has enabled Wi-Fi support in Android Wear so it no longer relies on just a Bluetooth connection to work. Instead, as long as your phone is connected to Wi-Fi at home, you can be anywhere else with a recognised or open Wi-Fi connection and receive your notifications on your Android Wear watch as normal. Of course, a smartwatch isn't a permanent replacement for a phone, but this feature does mean that you can at least wander around your house or workplace without your phone and still pick up messages without worrying about being beyond the limits of a Bluetooth sensor.

Sadly, while the LG G Watch, LG G Watch R and the Asus ZenWatch will benefit from every other feature in the update, they don't have the hardware to connect to Wi-Fi, so miss out on this upgrade.



Not every Android Wear will gain Wi-Fi support



Get the Android Wear update

- 1 Check your smartwatch is synced with your phone or tablet and that your phone is connected to Wi-Fi.
- 2 Open Settings and scroll down to About. Tap on this and scroll down to System updates. If any updates are available, approve the available installation.
- 3 After updating, you will be asked to allow permission for cloud sync. This will enable you to use the new Wi-Fi features on Android Wear.

New ways to navigate

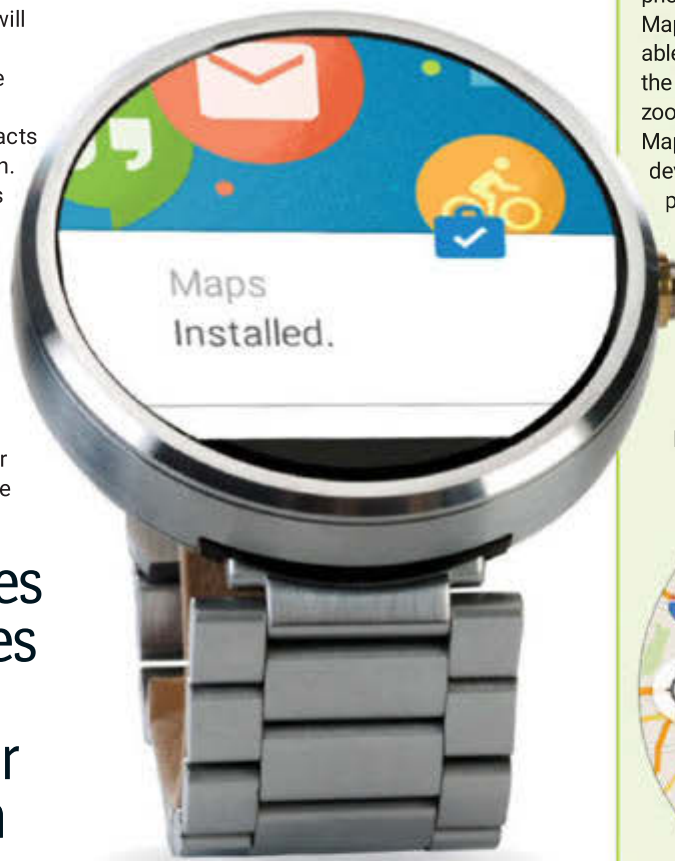
A new user interface makes it easier to explore settings

The UI has undergone a bit of a transformation, which has made navigating around the system much easier. A tap on the watch face when in time-telling mode will take you straight to a menu with your most recently used apps at the top of the list. This is a neat upgrade that will enable much quicker navigation of your watch's apps and make the entire UX more accessible and less of a maze.

Another major improvement is the contacts list that now appears on the second screen. A single swipe takes you to your favourites list, where you can call or message your friends and family in just a few swipes and taps. It also has undergone an aesthetic update too, with new backgrounds and wallpaper designs.

Before this update, Android Wear devices could be pretty tricky and time-consuming things to navigate around, which therefore cancelled out their time-saving selling point. Now that they are

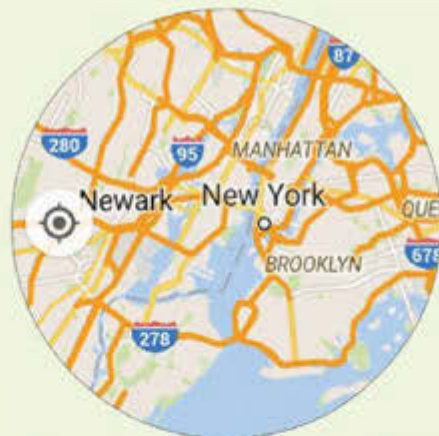
actually able to save you time and effort, smartwatches are finally beginning to look like a worthwhile and truly useful addition to your gadget store collection.



The new design is great, as is improved functionality

New look Google Maps

Before this latest update, Google Maps was present on Android Wear devices but wasn't an enjoyable user experience. However, if you update to Google Maps 9.9 on your phone, you should notice a difference in the Maps app on your wrist. You will now be able to use the touchscreen to move around the area, pinch to zoom in and swipe to zoom out. This is bringing nearly the full Maps functionality to your Android Wear device. You can even set your watch to point due north or point in the direction of travel to help those who struggle with directions. Now that you're able to operate Maps without your handset, there is even more freedom from your phone. This is another reason why smartwatches are becoming useful, standalone products, rather than just a pricey extension of your phone.



“A single swipe takes you to your favourites list, where you can call or message your friends and family in just a few swipes”

Hands-free scrolling

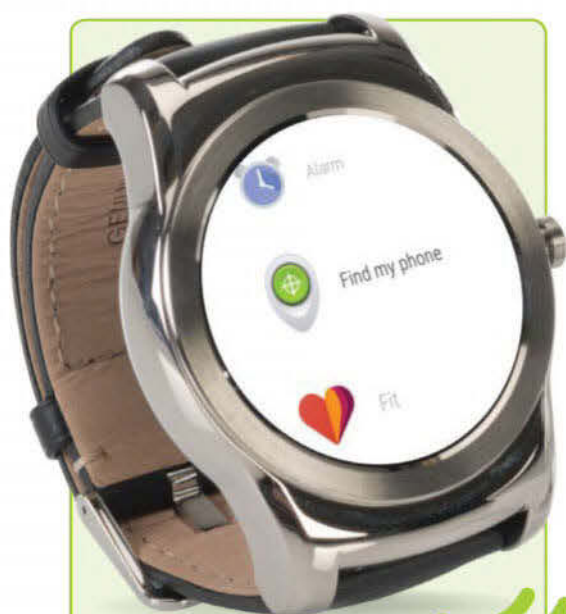
Move through your watch apps with a flick of your wrist

Not only has navigation got simpler in terms of locating your apps, it has also got easier to move around with the Wrist gestures function. As its name suggests, this update has made aspects of Android Wear devices truly hands free by enabling you to move through screens by flicking your wrist. A rapid rotation of your wrist away from your body will scroll down, while a flick towards you scrolls the screen upward. Unfortunately it only works with vertical scrolling, so if you need to go left or right to see additional information, such as

your settings or Google Fit pedometer statistics, you'll still need to use your finger to swipe across. It's responsive but not so twitchy that you constantly have to readjust your screen after merely turning your wrist to look at the time. This is incredible beneficial as you now no longer need to use a second hand to operate your watch, making it easier when using it for directions or your shopping list. Hands-free scrolling alongside voice control has made Android Wear devices really exciting and futuristic things to own.



The update includes a tutorial to using this new feature



Find your phone

The bane of many a smartphone user's life is when their phone goes unexpectedly missing. Usually the trick is to get a friend to ring it, but what if there's nobody about? Find my phone is a new addition to Android Wear that will call your mobile to help you locate your device even if it is on silent. Just tap on your watch, scroll down till you see 'Find my phone', tap on that and it will give your mobile a buzz. Once found you can stop it ringing from your watch. In terms of innovation, this is a huge leap forward for the usefulness of smartwatches.

Always-on apps

Display dynamic data on your wrist, even in Ambient mode

Before the update, if you were using your smartwatch to navigate or keep track of a list, it was immensely frustrating when the screen went black and you had to tap it awake again. Not only could you easily lose your place in a list or on a map, it meant using another hand to wake it up again and if you were in the middle of doing something, such as shopping or driving, this could be a real pain. The update has made a start in combating this by

extending the Always-on option in the settings to more than just the clock face. This means that the screen will always show some kind of display, whether it's the time, a map or a list, instead of going to sleep. Currently this feature only works with certain apps, but its likely this feature will get a wider roll out in time. Like the clock face mode, Always-on apps will also be displayed in Ambient Mode to save power when you haven't used your watch in a while.



With this new feature, essential apps are always visible without needing to wake the screen

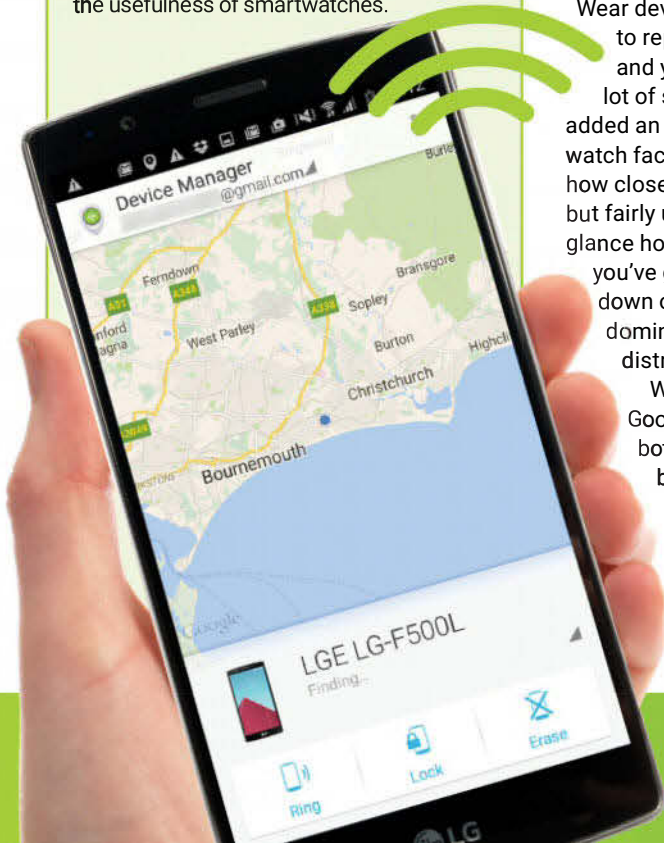
See your steps

Track your health with Google Fit's new watch face widget

Google Fit has been a key part of Android Wear devices since the very start, but having to repeatedly switch between the time and your daily fitness targets involved a lot of swiping. This latest update has added an optional Google Fit widget for the watch face, so you can always keep track of how close you are to your aim. It's obvious but fairly unobtrusive so you can see at a glance how many more minutes or steps you've got to go before you can slump down on your sofa. However, it doesn't dominate the screen in a way that distracts from the time.

While this is a minor boost to casual Google Fit users who don't want to be bothered with swiping up and down between screens, this should prove to be of great benefit to joggers and cyclists who would want to know both the time and steps completed whilst out and about without having the break stride or remove a hand from the handlebar to look at their stats.

“This should prove to be of great benefit”



Express yourself with emoji-drawing

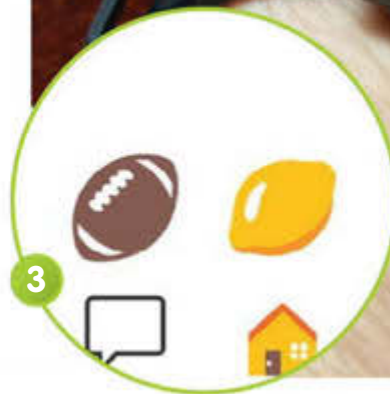
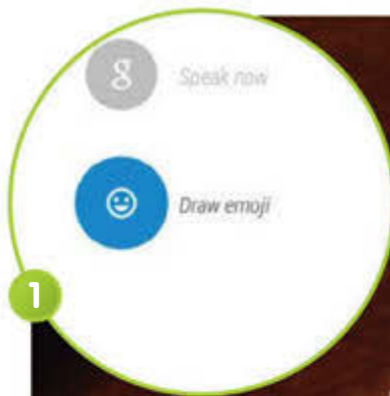
Scribble a smiley face and send it to a friend

One of the Apple Watch's tentpole features was the ability to draw on the watch face and send the doodle to friends. Third-party apps on the Play store quickly provided Android Wear users with that same ability, but the update goes one step further and adds a very similar native feature. However, rather than simply doodling any old thing, Android Wear recognises your scribbles and converts them into emojis that you can send to your contacts.

To use the emoji-drawing feature, swipe left until you reach the contacts list and select the name of the contact that you want to message. This will bring up the option to call or send a text. If you select the text option you can either talk to the device, which will translate your words into text, or send an emoji (see figure one). Draw whatever shape you want (figure two) and your Android Wear device will give you a few options of the closest approximation to the shape (figure three). Select your chosen emoji and it will send.

Emojis are good fun, are rapidly becoming a very popular way to communicate and they work especially well on smartwatches, which have very limited space for typing out messages. The ability to send a smile, a picture of a house or a plate, can instantly speak volumes to the recipient, who could then use their mobile to send you a reply that you can read on your watch. With watches now able to act independently of phones, emoji support is a vital tool in making the smartwatch seem like a totally individual product.

The timing of this announcement, hot on the heels of the Apple Watch's big launch, has dealt another blow to the pricey timepiece from Cupertino. Apple Watch's headline feature has already been matched within weeks of its launch, meaning that there is even more reason to get a much more wallet-friendly Android Wear product.



Keep notes

Create notes on your wrist without touching your phone

Google Keep has long been a popular feature on Android devices, clearly showing your notes and to-do list. Until the update the app was heavily reliant on your phone, but it can now work fully independent of your handset, which is really useful. Tap your watch face and scroll down to Keep. From here you can Add note verbally using the Google speech-to-text function. You can move through your notes with swipes and overall the navigability is improved from previous iterations of the app.



“Until the update the app was heavily reliant on your phone, but it can now work fully independent of your handset, which is really useful”



With the new updates rolling out, now is the time to buy a smartwatch

The final verdict

Is now the time to get an Android Wear smartwatch?

Google promised us a big update and it really has delivered. We are really impressed with the way it has untethered the smartwatch from the phone by adding in Wi-Fi support and increasing both native functionality and by more deeply integrating some of Google's most popular apps. This is something that the public has been clamouring for and making the smartwatch independent of the phone will show it to be its own product and provide consumers with a much better set of reasons for buying into Android Wear.

Certain aspects of the update, especially the Wi-Fi support and emoji drawing, are a clear shot across Apple's bows as these were two key features of their own, more expensive product. The fact that Apple Watch sales have already trounced Android Wear sales shows that companies such as Motorola, Samsung, LG and Sony have a lot of work to do to convince undecided potential customers that theirs is the

product to buy. On the evidence we've seen, and trying to be as unbiased as possible, Android Wear certainly seems to be the best option. If you ignore the hype around the Apple Watch and objectively look at what it offers compared to Android Wear devices, it generally comes off worse or, at best, offers the same service for a much higher price.

This update should prove a huge boost to

“This update should prove a huge boost to Android Wear sales as it has responded to many issues”

Android Wear sales as it has responded to many issues brought up by non-smartwatch users, such as Wi-Fi support and separation from the phone, to name just two.

However, there are always areas for improvement. We're hoping that the next big update will see the Always-on feature extended to third-party apps, and some sort of lockscreen or PIN code to protect our privacy. Improved speech-to-text functionality - or at least better microphones built into the watches - is also a must. On a lighter note, it would also be fun if Android Wear embraced smartwatch gaming in the same the Apple Watch has.

Whatever is coming next, this update is a major step in the right direction for Android Wear that makes the platform a much more attractive one for manufacturers and users alike. If you've been on the fence about buying into Android Wear, now is the time to do so.



GALAXY S6 SECRETS

Discover 20 hidden features that Samsung didn't tell you about

With the release of the Galaxy S6 and S6 Edge, Samsung took the unprecedented approach of trimming down the sheer number of features in their TouchWiz Android skin. That's not to say that the device isn't fully featured, however – there is still a lot to discover and a lot of different ways that you can tweak your device to get the most out of the experience. This includes installing and configuring third-party software as

well as making a few simple changes to the stock settings, so that they suit you more efficiently.

The S6 devices come preloaded with Samsung versions of many stock Android experiences such as the launcher, camera, calendar (S Planner), and if the standard versions are more to your preference, one of the great advantages of Android is that the Google equivalents can be easily installed from the Play store. Customisation really

is the essence of Android – enjoy your phone, your way. There is more to come from Samsung on the S6 too. The device is ready and equipped for Samsung Pay, Samsung's NFC payment technology, but this won't be launched until later this year. Samsung is also releasing frequent updates for the S6 as it is such a new device, bringing improved performance, additional features and the very latest Android version in tow.

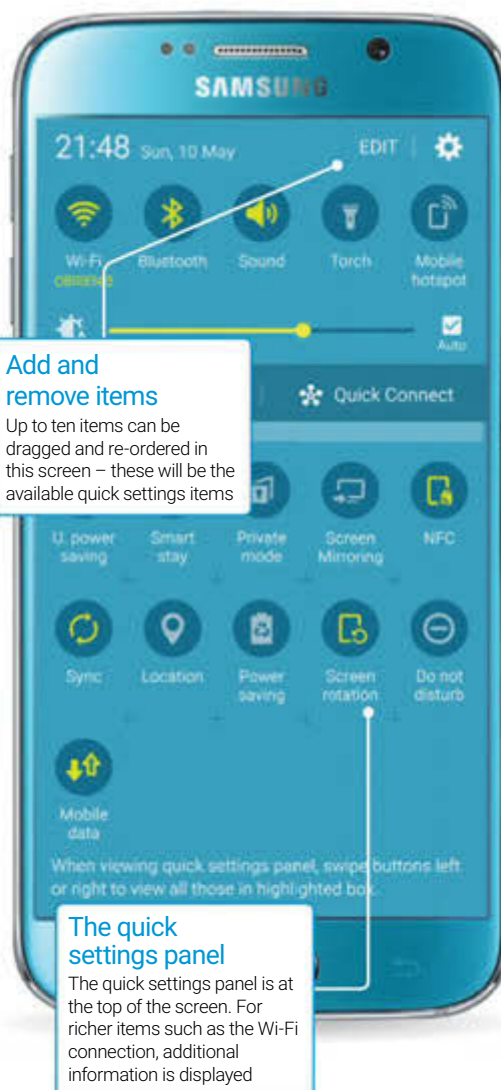
Edit your quick settings panel

Tailor your quick settings to suit you

The quick settings panel is the bar that appears at the top of the screen when you pull down your notifications. On stock Android Lollipop the toggles have a screen of their own accessed with a two finger pull-down or by pressing a button, but Samsung have taken a slightly different approach. As with previous versions of the TouchWiz software, in the standard view there are just five toggles visible, however, this is scrollable left and right (an action that is not immediately obvious) to see up to ten additional buttons.

If the toggles provided by default aren't to your liking, pressing the edit text at the top of the notification pull-down opens a configuration page, where items can easily be added or removed. The order of the items can also be changed in this screen by clicking and dragging the icons. Below the quick settings panel itself sits the brightness slider and the S Finder / Quick Connect buttons. Unfortunately, these are always displayed and can't be removed.

"As with previous versions of the TouchWiz software, in the standard view there are just five toggles visible"



Backup your photos

The Galaxy S6 and S6 Edge both take stunning photos, so it's a very good idea to ensure that if you lose your device for any reason, your photos are backed up! Samsung include two tools on the S6 suitable for this purpose – Google Photos, the solution that backs up to Google Drive, and OneDrive, the equivalent Microsoft application. Both have options to enable backup only when on a Wi-Fi connection to save your data allowance and both include a generous amount of free space.

Get Samsung free bonuses

The Galaxy S6 devices include a host of free bonus content from Samsung and their partner companies. As well as free service and storage from Google and Microsoft, benefits include three months of unlimited music with Deezer, free access to Vidzone video streaming, a free book each month for 12 months from Amazon Kindle, three months of free audiobooks, three months free Evernote Premium and more. Additional applications from Samsung can be downloaded.

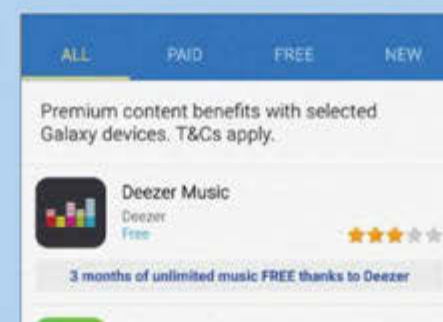
Install bonus content

Grabbing your free content from Samsung is quick and easy



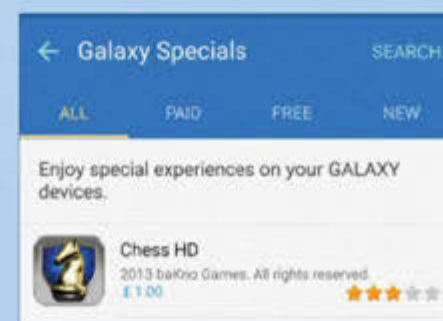
1 Galaxy Apps

The free content with your S6 is branded Galaxy Gifts and is installed from the Galaxy Apps application in your launcher. The app will likely update itself the first time it is launched. A Samsung login is also required.



2 Download and install

After launching Galaxy Apps, navigate to the For Galaxy tab and click 'See more' on the Galaxy Gifts section. Entries can be filtered by paid, free or recently added – useful to check if there's any new content added since you last opened the app.



3 Galaxy Specials

As well as the Galaxy Gifts section, a Galaxy Specials category is also included. This lists apps that are exclusive or specifically optimised for Samsung phones. These too are installed from within Galaxy Apps and categorised by paid and free options.

Best apps for the Galaxy S6



Galaxy Button Lights

Inexplicably, Samsung have removed the option on the Galaxy S6 to change the duration of the backlight for the capacitive buttons. This app lets you do so or even disable the light altogether, useful if you've reversed the order of the buttons as they then become virtually invisible.



FingerSecurity

FingerSecurity is one of the first apps to take advantage of third-party API access to the fingerprint sensor on the S6 devices. This application lets you secure access to individual apps on your device, with advanced options to enable locking when only away from certain locations.



CF-Auto-Root

CF-Auto-Root is an automated utility for rooting your Galaxy S6 device. Using this tool is quick and easy, however, it does trip the Knox flag, preventing use of Knox and potentially Samsung Pay in the future. PingPongRoot is a new, alternative option that doesn't have this drawback.



CM Locker

CM Locker (Security, Booster) from Cheetah Mobile is an Android lock screen replacement that now includes support for the fingerprint sensor on the S6. Advanced features include intruder selfies, repeating notification reminders, battery drain detection and much more. The lock screen also includes shortcuts for recent apps, weather, torch, camera, calculator and more.



Manual Camera

Lollipop adds a new API – Camera2 – to give third-party applications access to the low-level camera functionality. This means that the user installed applications can take advantage of full manual control as well as the ability to shoot RAW images for professional photographers. Manual Camera combines this advanced functionality with a gorgeous UI too.

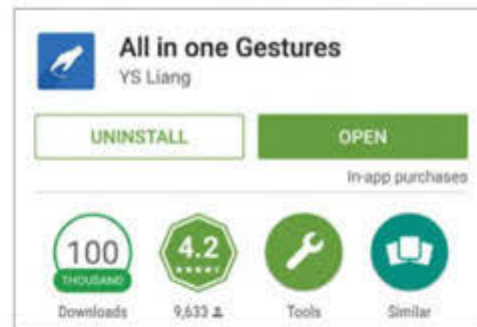


Up by Jawbone

As with previous generations of the S range, the Galaxy S6 includes S Health for health tracking including heart rate monitoring and step counting. A key element of fitness tracking is competing with friends, something that's enabled with the Up by Jawbone app, supporting both the company's fitness bands and the S6's in-built sensors.

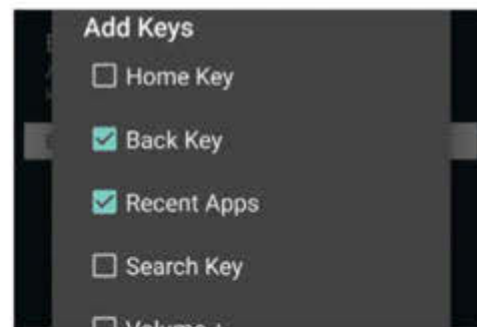
Reassign the capacitive buttons

Easily swap the recent tasks and back buttons



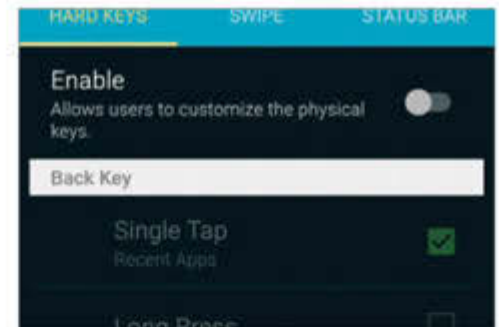
1 Install 'All in one Gestures'

The Galaxy S6 devices are unique in Android with the recent apps button on the left of the home key and the back button on the right. 'All in one Gestures' from the Play store enables them to be easily swapped around.



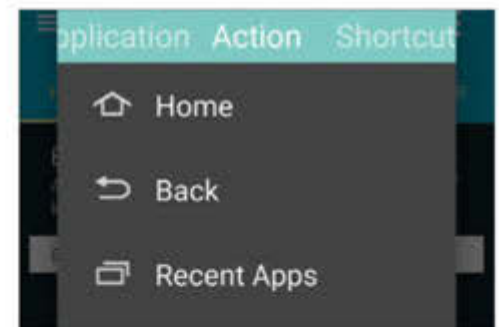
3 Display the back and recent buttons

By default the Hard Keys section of the application will show the Home Key and the Back Key. Press the + icon in the bottom corner, uncheck the Home Key box and check the Recent Apps box.



2 Get accessibility access

After launching the application and choosing to re-assign the Hard Keys (physical buttons), you will be prompted to enable accessibility access. Click the banner and activate 'All in one Gestures' in the services list. Press back to return to the app.



4 Reassign the buttons

Press the toggle button at the top of the screen to enable customisation on the physical keys, tick the Single Tap box for the back key and select Recent Apps, then do the same for the Recent Apps key and select Back.

Enable double tap to sleep

The physical home button and fingerprint reader is one of the greatest features of the S6, meaning that you never need to use the power button to wake the device. You do still need to use it to turn the device off, however, unless you use another neat feature of 'All in one Gestures'. The app enables you to assign an action to a double tap of the top status bar, such as turning off the screen and locking the device. With this enabled, the behaviour emulates rival devices such as the LG G3 and you need never use the power button!

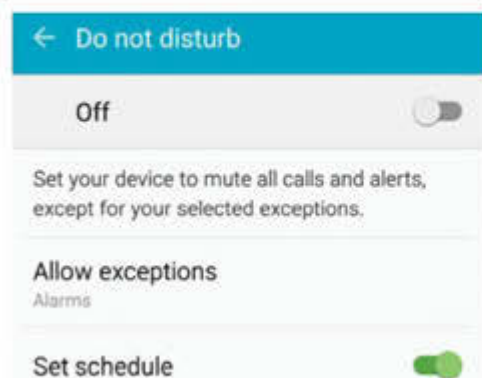


Boost your download speeds

Wireless connectivity on the S6 is definitely no slouch, but if you have a particularly huge file to download and both a Wi-Fi and LTE connection available, the phone can team the connections for a super-fast download speed. The function is activated via the Settings mode in the phone, labelled as Download booster. If the option is checked, the function is automatically activated for files over 30MB in size. Keep an eye on your data download allowance if you are using this feature!

Connect the S6 to your car

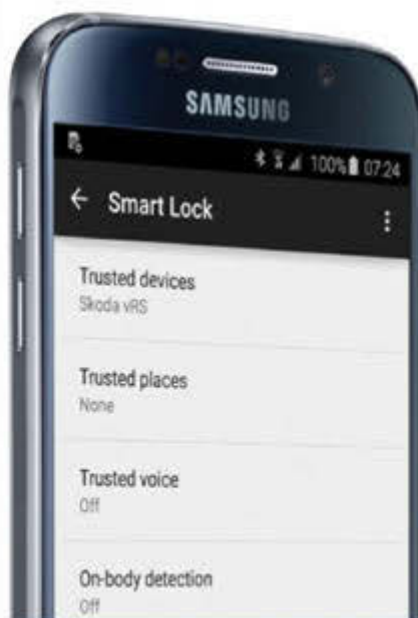
Many modern cars are now including MirrorLink functionality in their entertainment systems. As the name suggests, when the S6 is connected to a MirrorLink enabled car using a USB cable, the device's screen is disabled and the content is mirrored onto the entertainment display of the car. Touches on the screen of the car are also replicated back to the device – this is particularly useful for satellite navigation apps. On first connection, the S6 will download a custom UI tailored for use in the car.



Enable 'Do not disturb'

Instead of the Lollipop priority notifications functionality, the S6 includes custom 'Do not disturb' functionality, which enables the user to mute all calls and alerts with the option to manually configure alarms, calls, messages, events and reminders or specified apps as custom exceptions. 'Do not disturb' can be enabled or disabled manually or configured to automatically activate between certain times, such as 11pm-7am on weekdays. A button can be added to quick settings to easily toggle the feature.

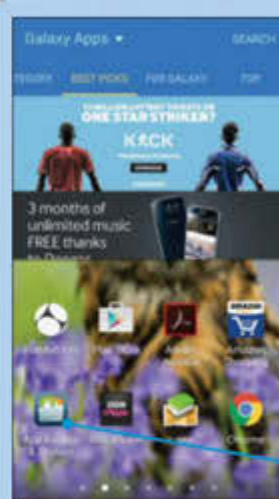
Take advantage of Smart Lock



Android Lollipop together with Google Play Services adds functionality called Smart Lock, where various different functions can be used to determine whether or not the device should be locked. Features include location-based lock and Bluetooth-based lock, as well as face recognition, voice recognition and 'On-body detection'. With the particularly effective fingerprint sensor on the S6, Smart Lock becomes less important, however, it is still worth enabling for situations where placing a fingerprint on the phone might be awkward, such as when the phone is in a car holder. For this scenario, Smart Lock based on a Bluetooth connection to a car is ideal.

“Features include location based lock and Bluetooth connection based lock”

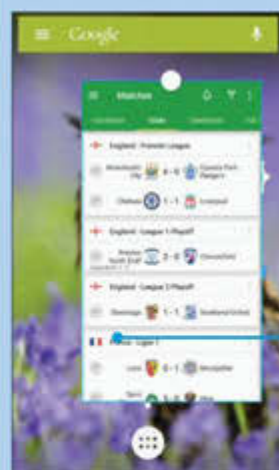
Use multi window modes



Enabling multi window viewing

Multi window is enabled from the recent apps page – look for the two rectangles by a close button indicating that an app is compatible

Multi window can be used as a split screen



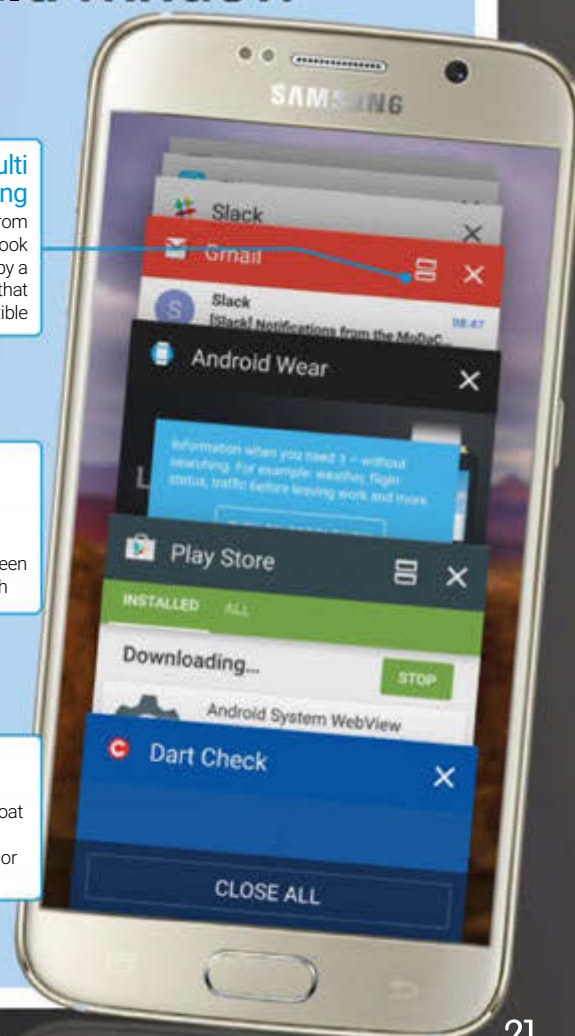
...or as a floating window

Split screen mode

The default multi window settings is a split screen mode – the chosen app opens at the top of the screen with a launcher underneath

Floating window

Applications can also be opened in Windows that float on top of your other apps, which can then be resized or moved to suit you

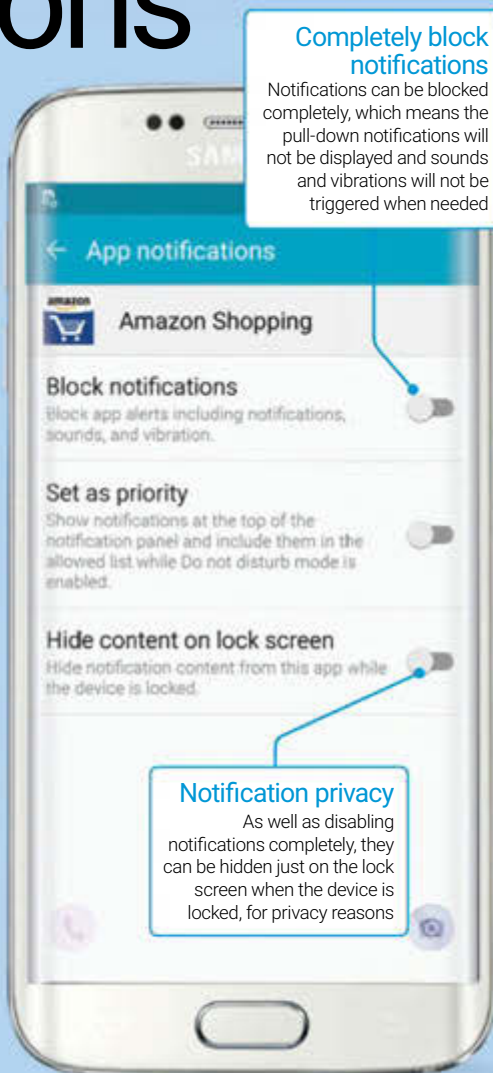


Manage system and application notifications

The App notifications option in the Settings menu enables the user to manage notifications for any installed app on the device. In addition to the global 'Do Not Disturb' functionality, this option enables more granular control of which notifications appear at all times. The option to block notifications completely is available for all apps installed by the user and some system installed apps, while the ability to hide sensitive content from the lock screen is available for all apps. Notifications can also be set as high priority which ensures they are displayed at the top of the list in the notifications pull-down (this flags that they should be displayed in 'Do not disturb' mode).

When adjusting the volume on the S6, the 'cog' button enables granular control of different volume settings, including setting a specific volume for notifications, letting them be effectively muted while other sounds still play. By default, the S6 also has a LED indicator that is used to indicate when notifications are waiting to be addressed—this can also be disabled in the Settings menu.

“The option to block notifications completely is available for all apps installed by the user”



Efficient charging

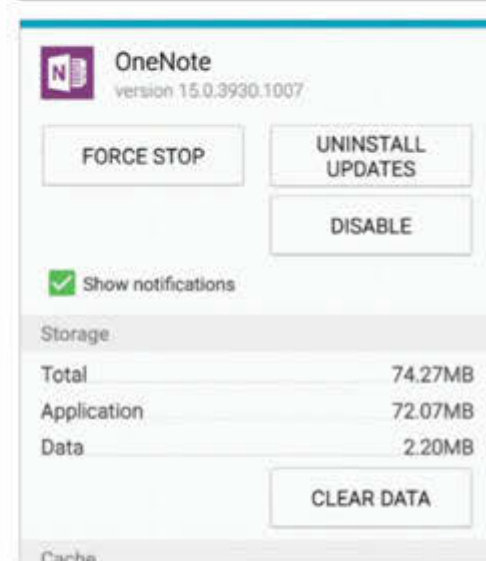
The Galaxy S6 might have a relatively small battery, but the plus side is that it supports a wealth of charging options. Although wireless charging is built in and is undoubtedly the most convenient, it is also the slowest option. The fastest way to get charged is using the fast charging adaptor supplied in the box or another Qualcomm Quick Charge 2.0 compatible charger. If this isn't available, a standard charger is still faster than a wireless charging pad, albeit a little less convenient.

Change default applications

When installing multiple apps that support the same actions, such as launchers or photo apps, the user is prompted to choose a default for use 'just once' or 'always'. In an improvement over stock Lollipop, Samsung provide a single place in the Settings app to manage these defaults which are normally buried inside individual app details. This is particularly important when installing a third-party launcher, as they have to be selected manually on the S6 devices.

Monitor your battery usage

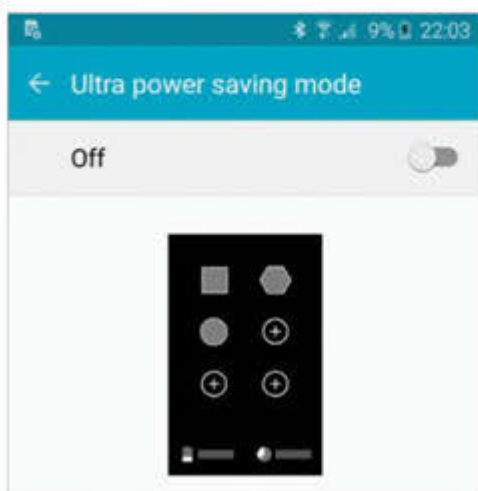
Although the S6 has a relatively small battery, the actual longevity isn't as bad as many had feared. With that said, however, careful battery management is important to make the most of the power that is available. The Battery section in the settings menu includes a graph of the battery level, screen on time data since the last charge and various statistics to help you track down particularly power hungry apps. For additional data, particularly if you are rooted, third-party applications such as 'BetterBatteryStats' or 'GSam Battery Monitor' will provide a further level of information for you to explore.



Disable preinstalled apps

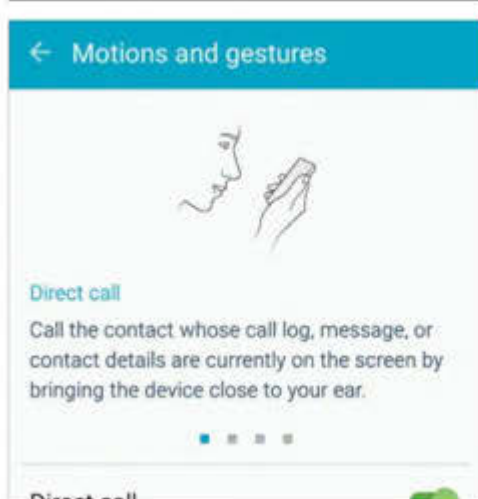
The S6 ships with quite a few Samsung apps that might not appeal to everyone, as well as some from third-party partners such as Microsoft. The good news is that a number of these can be uninstalled completely while the remainder can be disabled. Disabling an application sets a system flag that it should not be displayed in the launcher or started in any way whatsoever – the main application file remains on the system partition (although any updates are uninstalled), which means that if you wish to use the app in the future, it can be re-enabled without re-installation. As well as not using system resources by running as a service in the background, space on the data partition that would otherwise be used by updates, is saved.

In order to disable an application, load the Settings app and select the Application manager. You should see a button to disable the app. In the case of what are deemed system critical applications, the button may be greyed out – in this case, the only way to disable the app is to use a root tool such as Titanium Backup or something similar.



Use the ultra power saver

'Ultra power saving mode' can be activated via the quick settings panel or in the settings application itself, and is a great last resort for when you are away from a power source and running critically short of charge. This mode saves battery power by applying a simplified greyscale theme to your device and limiting available (and background running) apps to the bare essentials. In addition, mobile data will be disabled when the screen is off and Bluetooth and Wi-Fi will be disabled.



Use motions and gestures

The 'Motions and gestures' feature of the Galaxy S6 devices enables you to control your device just by moving it. Direct call lets you call the contact, whose call log entry, message or details are on the screen, simply by lifting the phone to your ear. With the Smart alert function, your device will vibrate when you pick it up to notify you about missed calls and messages. Placing your hand over the screen or turning the device over will mute any incoming calls and alarms.

Make the most of the camera

One of the best feature of the S6 devices is their camera – take your best pictures with these tips



1 Quick launch the camera

The S6 camera opens super fast and is easy to open from the lock screen using the shortcut in the bottom right. But there is an even quicker way! Simply double tapping the home button instantly opens the camera in a secure mode if your device is locked.



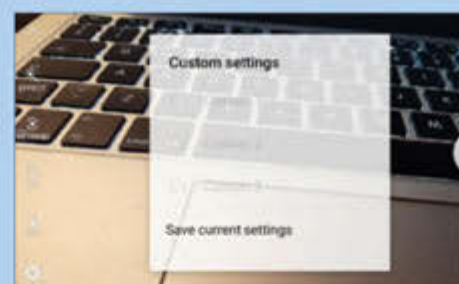
3 Add a bokeh effect

The bokeh effect on photos is where the foreground is in sharp focus but the background is blurred. This happens automatically for some shots and with high-end lenses, but the S6 has a mode to enhance this effect called Selective focus – photograph less than 50cm away to use.



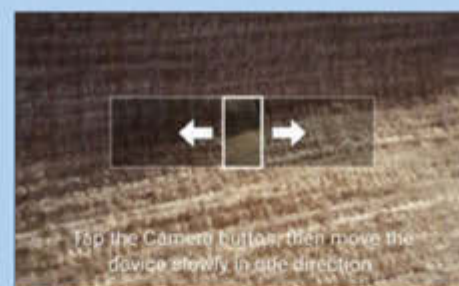
5 Track moving subjects

The Galaxy S6 camera is super-fast to focus, but it also has another trick up its sleeve that helps you take great pictures of fast moving subjects. It has a tracking autofocus function – after selecting a subject, the phone will automatically maintain focus on the target.



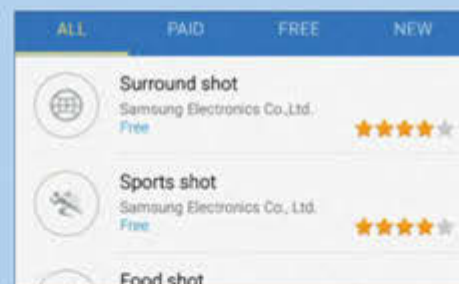
2 Shoot like a pro

As well as the excellent fully automatic mode, the Galaxy S6 camera includes a pro feature for manual control, accessed by pressing the mode button in the bottom right of the capture screen. A host of advanced settings can be configured and saved as custom presets.



4 Panorama mode

The Galaxy S6 includes a panorama mode for taking large, high-resolution vistas. In addition to landscape mode from left to right or right to left, the phone can also capture panoramas in vertical orientation for higher quality images. Each image is taken at a 6MP resolution.



6 Download additional modes

As well as all the built in modes in the S6, a host of additional features are available for download from the Galaxy Apps store by selecting the Download option in the Camera app, including Surround shot, Food shot, Dual Camera, Beauty face and our favourite, Animated GIF.

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» masterclass

Unlock Chrome's hidden features

Try out bleeding edge browser features before they officially launch with Chrome Dev

For the majority of users, the Chrome browser is straightforward to use. Open the app, type in a web address or key phrase, scour the search results, read what you wanted to read and that's that. For a long time, this has been pretty much the limit of what you can do with the mobile app, but many desktop users and Chromebook owners know Chrome can do so much more.

We're not talking about saving bookmarks and adding extensions, but accessing experimental features through developer channels before they are added to the official

app. However, Google has now launched Chrome Dev on the Play store so Android users can also test out secret features before they go mainstream.

This masterclass will show you how to get set up with Chrome Dev, how to trial experimental features, and some of the most useful ones to try to enhance your browser experience. But, as the name suggests, many of these features are still in development and so are prone to bugs. So before you begin, check out our safety tips in the right-hand sidebar.

Three stages of Chrome

Every feature goes through these three steps before becoming part of the official Chrome app



Google Chrome Canary

This is the most experimental stage of Google Chrome. The team throws updates onto this platform in their most raw form so problems can be found straight away. It is buggy though.



Google Chrome Dev

This is the newly released level. Major issues will have already been dealt with, but there are plenty of bugs to discover and you can still access features before they're available.



Google Chrome Beta

This is the final stage before updates are released onto the main Google Chrome app. Everything has been thoroughly tested and most bugs found, so this is the safest for early access.

Five ways to explore Chrome Dev safely

1. Get the app

You can download the Chrome Dev for Android app alongside the normal Google Chrome app. So if you want a truly smooth browsing experience, just switch to normal Chrome and you should be fine.

2. Expand your options

Google Chrome Dev has been available to Linux, Windows and Mac users for a while now, so you can test Chrome features on other platforms if you have them.

3. Find the latest news

If you go to www.googlechromereleases.blogspot.co.uk, you can find the latest updates that have been made to the channel, as well as what the update has altered. This will usually be bug fixes or security updates, but explore the pages to see everything on offer.

4. Back up your device

There is an associated risk with using the Google Chrome Dev channel. As with all experimental technology there's a danger that something in the code will make your device lose data, so be sure to back up all of your information on your PC or cloud account before trying anything new.

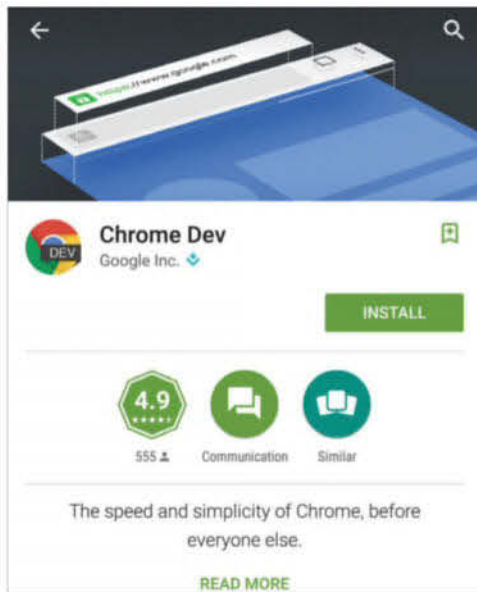
5. Older versions

Be aware that not all updates are available for your device. If you're running an older version of Android or your phone doesn't have certain features, then you may notice a discrepancy between the online list of updates and the list that you see on your phone.

Get Chrome Dev for Android

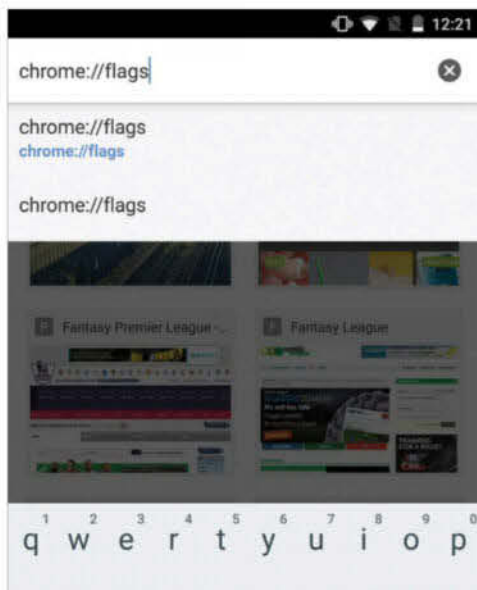
Download the app and get experimenting

Although downloading pre-release software might seem to be the domain of hackers and experts, it's not really that difficult. However, you have to know what you're doing once you're inside, so here's how to download Chrome for Android Dev and find your way into the options.



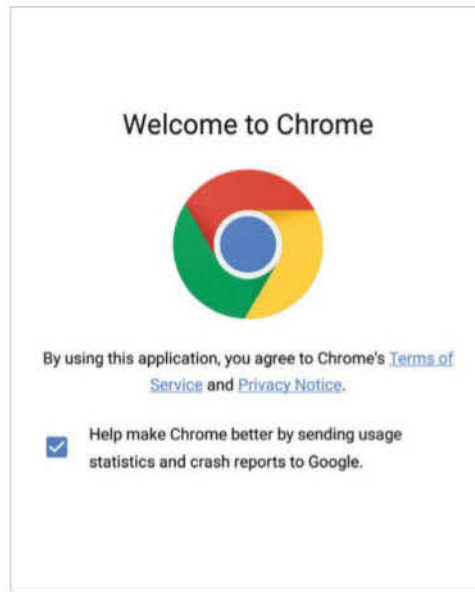
1 Download Chrome Dev

Open the Google Play store and type in Chrome Dev. You should see the app with the Chrome logo with the word Dev across it. Click on it and select Install. This can work alongside your existing Chrome app.



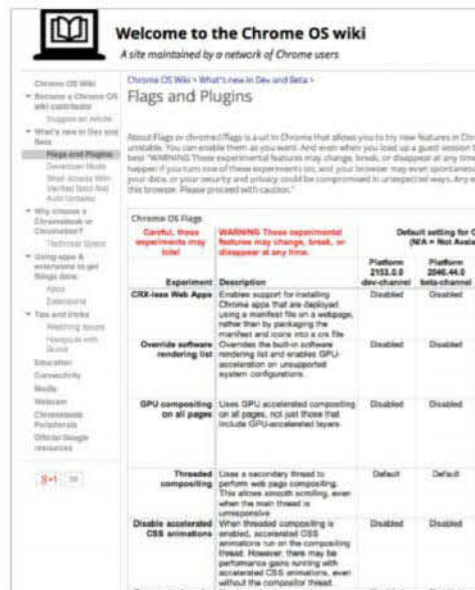
3 Access new features

Tap on the web address bar and type in 'chrome://flags'. This will open up the entire list of experiments that can be enabled on that device. Click Enable on your chosen experiment, relaunch Chrome and the experiment will become active.



2 Open the app

Open up the app and you should see near enough the same Google Chrome homescreen as you're used to. However, when there are updates available, you will see a dialog box appear explaining the change.



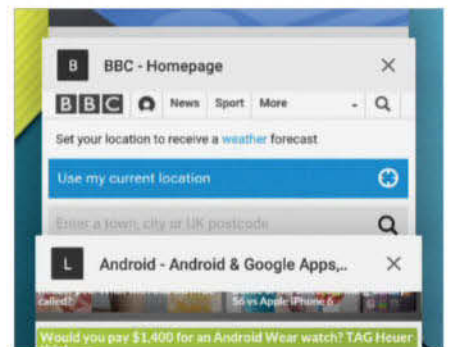
4 Find other experiments

To discover the entire list of available experiments, go online and type in sites.google.com then look on the left-hand side and select 'Flags and Plugins'. This will bring up a full list of experiments and explanations of what they do.



Even before you access chrome://flags, Chrome Dev already does a few things differently to the default browser

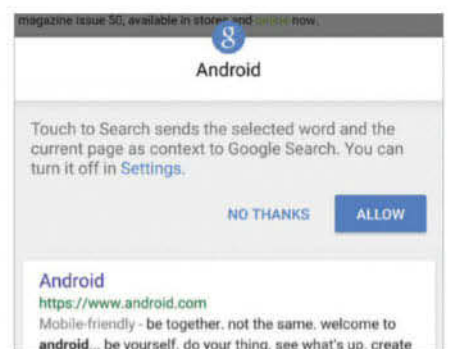
Navigate new changes



1 Your tabs have moved. Rather than tapping the number in the top-right corner to change tabs, you'll now have to press and hold the bottom-right home button.



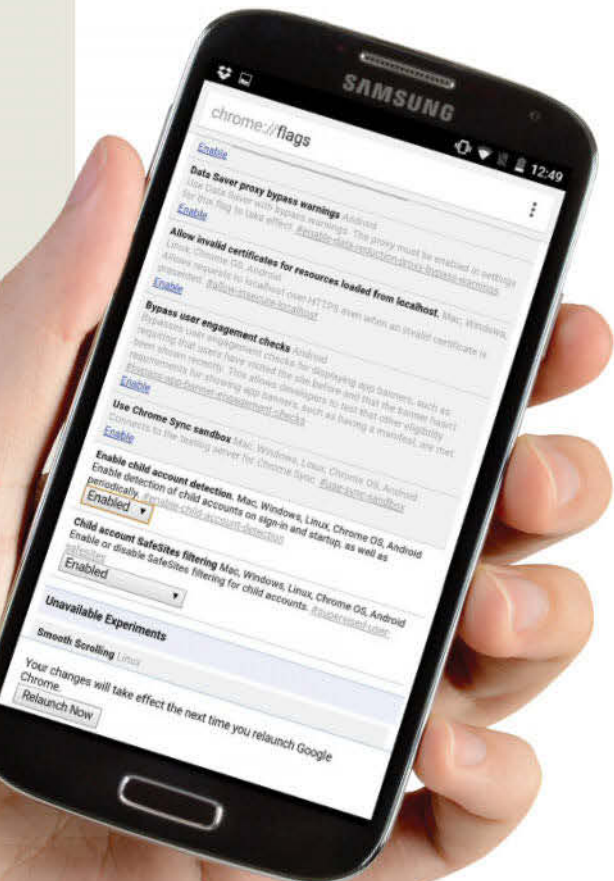
2 Tap the Reader View option as it appears at the bottom of the screen and this will bring up a stripped down version of the webpage, removing ads.



3 In 'Touch to Search', press and hold on a word and Chrome will instantly bring up a Google search for that word, helping you with definitions or an actor's name.

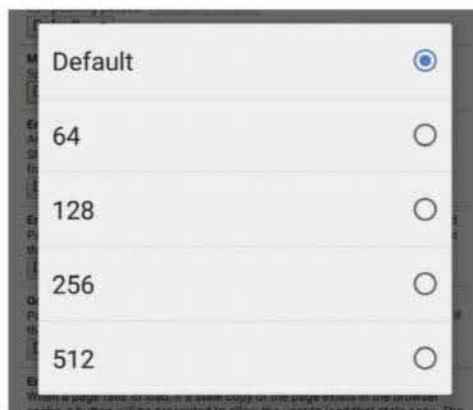
Speed up your Chrome browsing

Make your Chrome experience that little bit faster with these flags

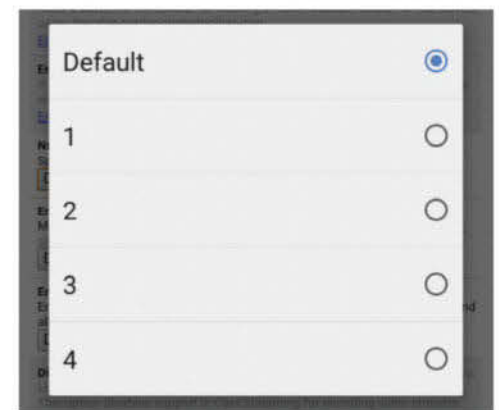


When you're used to super fast broadband speeds, navigating webpages and videos on your smartphone browser can be frustrating, especially if you aren't connected to Wi-Fi or the connection is slow. To combat this, Google Chrome has created a number of flags that can give your browsing small boosts to increase the speed to something closer to a Chromebook, laptop or even just a better phone. Although these may end up costing

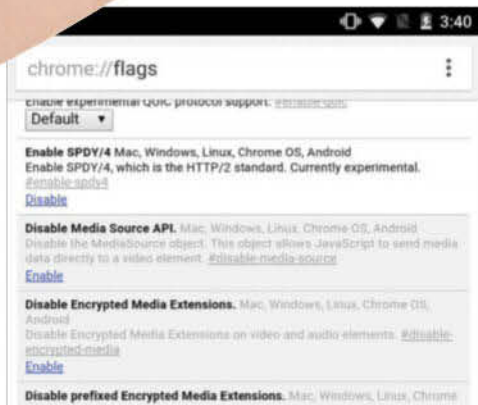
you more in terms of processing output and battery life, if speed is what you're after then these flags could really help. On the flip side, if you're wanting to conserve power, going in the opposite direction to the directions below will aid you in this while browsing the web. We will show you which flags will speed up your browsing experience and tab transitions as well as how to activate and de-activate them so you can use them as you please.



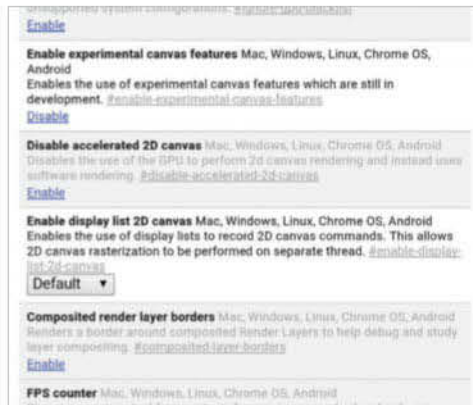
1 Increase maximum tiles
Your phone will limit the number of tiles used in a bid to save RAM. Scroll down to 'Maximum tiles for interest area' and increase them as high as you want. This will assign more RAM to your actions and speed things up.



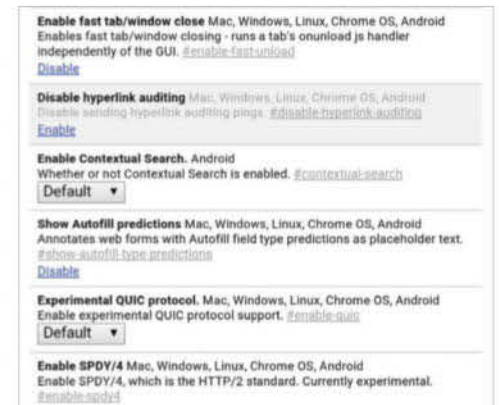
2 Add more raster threads
Raster threads are responsible for rendering images as they appear on your phone. Scroll down the list until you reach 'Number of raster threads' and tap on it. Increase the number to three or four and images will load much faster.



3 Work with SPDY/4
SPDY is a new protocol designed to reduce latency and load pages faster. You can activate it by finding Enable SPDY/4 and relaunching the browser. Chrome claims this could increase screen loading speeds by up to 64 per cent.



4 Enable opaque canvases
This is another experimental feature that will speed up web page loading. By enabling experimental canvas features, the browser will know it can get rid of anything under the canvas pixels, reducing the loading time of a web page.



5 Speed up closing down
Sometimes your web pages can take an age to close, which is a real frustration. If you enable 'Enable fast tab/window close' it will run any 'onunload Javascript' handler independently of the GUI, leaving more power to close the page.

Message us!
Got any Chrome Dev tips?
Let us know online

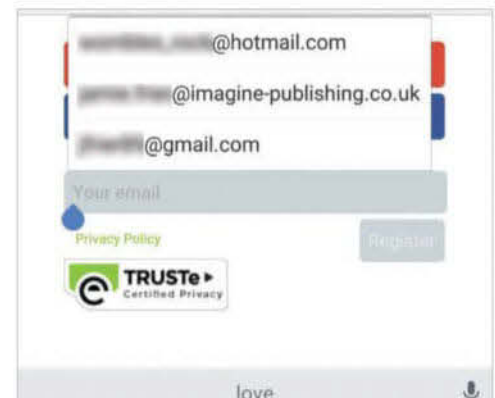
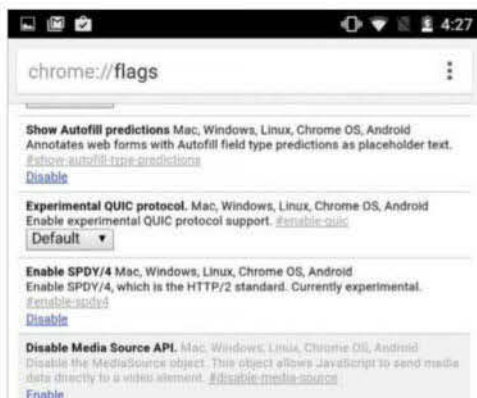


» masterclass
Unlock Chrome

Enable autofill options

Speed up the process of entering your details on your phone

Nowadays we have so many different accounts on various websites, it can be a real pain to type in email addresses, usernames and passwords every time we want to log into a site. However, if you have kids or others who use your phone, you might not want them to have such easy access to your social media and financial accounts. Autofill is a handy option that has been available to iPhone users but isn't a feature on Chrome until now, even though it is still in the experimental stage. This tutorial will show you how to activate this mode in Chrome Dev for Android and make the whole process of entering details a little less time consuming for you to do.



1 Enable the experiment
Enter 'chrome://flags' into your Google Chrome web search bar. Scroll down until you see the option to 'Show Autofill predictions'. Click Enable and relaunch the app. This setting should now be applied and give you the option to disable.

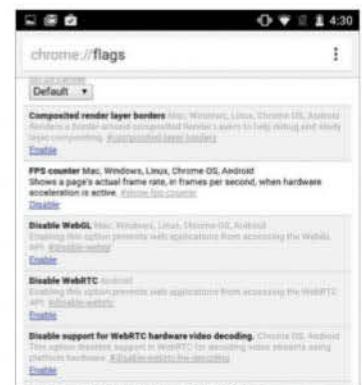
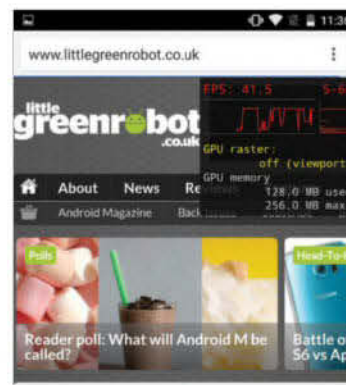
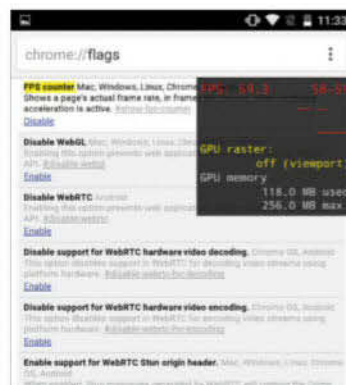
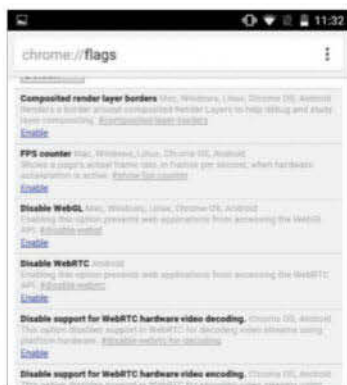
2 Enter your details
Using the Google Chrome Dev channel, sign up for a website with your email address. If possible, choose one that asks you for lots of details such as address, full name and date of birth, so you don't have to type them in next time.

3 Easily input data
Go to another website that requires the input of an email address and click on the input field. This should show your chosen email address as well as all the other information you've inputted. Disable by clicking Disable in 'chrome://flags'.



Keep tabs on your GPU usage

Discover when and why your frame rate might be lagging



1 FPS counter
Go to 'chrome://flags' and scroll down the list until you find the experiment entitled FPS counter. At the time of writing it is fairly near the top of the list. Click on Enable and then relaunch the app when you are prompted to do so.

2 Keep track
In the top-left hand corner, you should be able to see a grey box that shows you your current frame rate, GPU raster and GPU memory usage. The higher the FPS number, the better the current frame rate, so it's worth keeping an eye on what is going on.

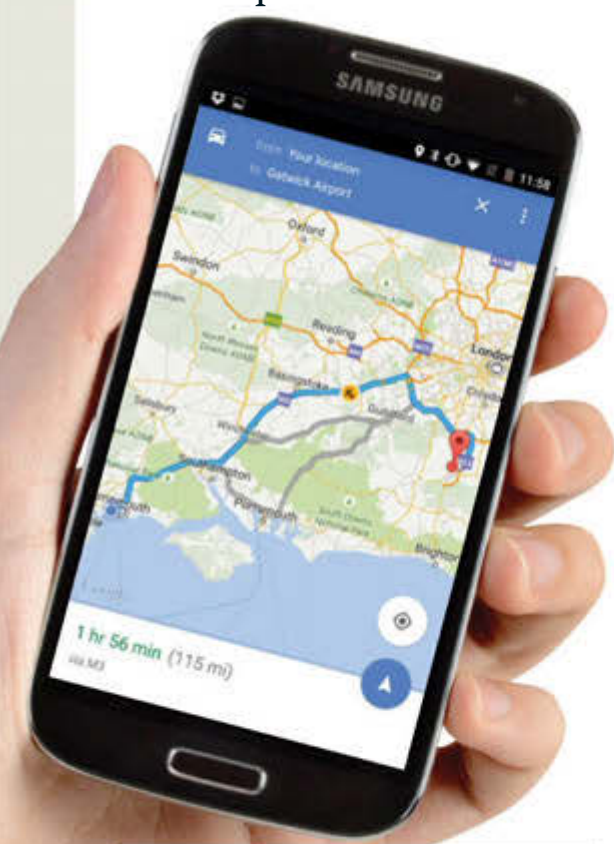
3 Upgrade
Try some other pages to see how the frame rate rises or falls. In this example, the page is using more GPU so the frame rate has dropped slightly. If it is causing your frame rate to drop below 30fps, you might need to upgrade.

4 Disable
This is quite a visual distraction and will obviously block a fair portion of you screen. You can disable this feature by going back into 'chrome://flags', scrolling down and then clicking Disable. Relaunch the app and it should have disappeared.

App used >> Google Maps Works with >> Varies with device

View custom maps for your booked events

Find your way to your restaurant booking with new Maps feature



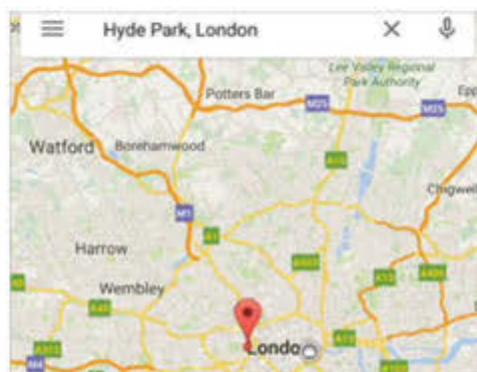
If you have booked a table at a restaurant or tickets to a show through Gmail, Google Maps will now guide you to your event with a personalised route map.

The functionality isn't new, as it's already available inside Google Now, but it certainly makes sense seeing it appear in Google Maps since that's where these queries will be made most of the time.

Events that integrate with this new Maps

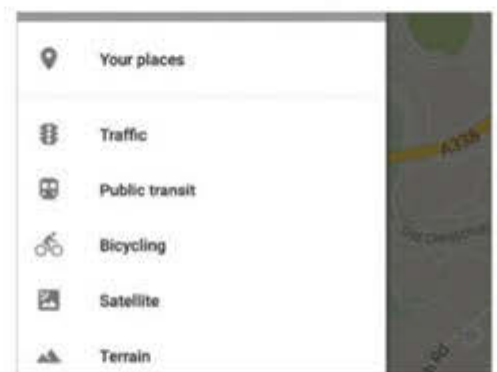
feature are quite wide-ranging, but can also be filtered by flights, hotels, reservations, and more. For this to work, you have to let Google access your personal data to have that information readily available inside Google Maps if triggered by any of these keywords.

This tutorial will show you how to set up the Google Now functionality in Maps, access your custom maps, filter them by type and hide them if necessary.



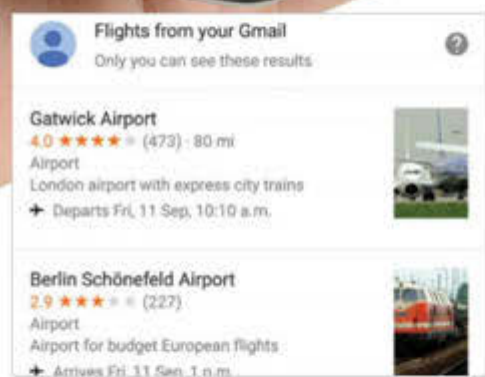
1 Update Google Maps

For these new features to take effect, you will need to be running at least Google Maps version 9.8. Go into the Google Play store, search Google Maps and then click Update to ensure you have the latest version installed. Once that is done, open the app.



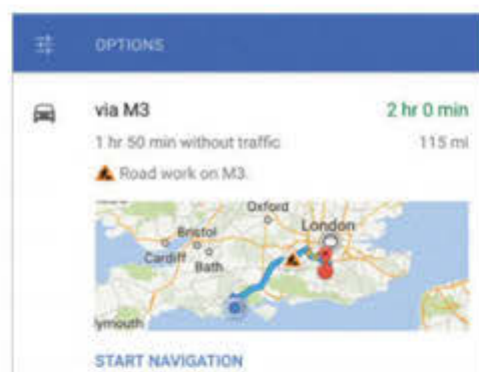
2 Check Google Now

Click the hamburger menu in the top left-hand corner. This will open up your Google Now screen. If you share your device with anyone else then make sure the active account is yours only, otherwise the information won't appear, which will be very inconvenient.



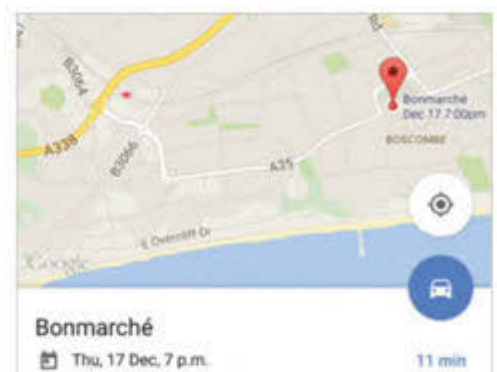
3 My events

Tap the search bar at the top of the app and type or say aloud 'my events,' and Google Maps will then provide information cards and maps for all of the event that you have booked through your Gmail account.



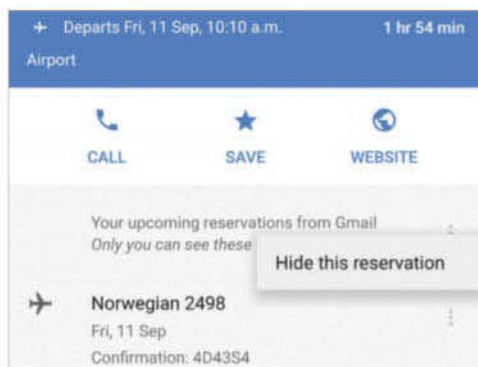
4 Plot your route

You can now press just one button to get the directions to your destination. Tap the car icon in the bottom corner and it will generate the route for you, without you having to type in any postcodes or addresses.



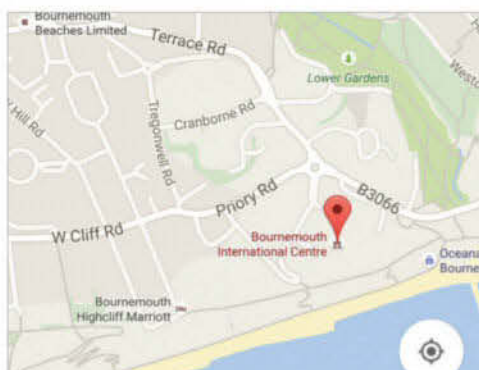
5 Narrow the search

If you are overwhelmed by the number of results and want to find a specific item quickly, instead of 'my events,' you can type or say 'my reservations,' 'my hotels' or 'my flights' to filter your search results.



6 Hide your reservation

If you have planned a surprise meal or trip for someone who may be able to access your device, swipe up and then tap the triple dot menu on the right-hand side. Here you can remove that card from your list so that it is hidden from the prying eyes of the person in question.



7 Not everything works

If you don't have any planned events or have typed in some non-supported phrases, Google Maps will instead direct you to nearby companies that have a similar name to your entry and give you information about them so you can be sure that you are heading the right way.



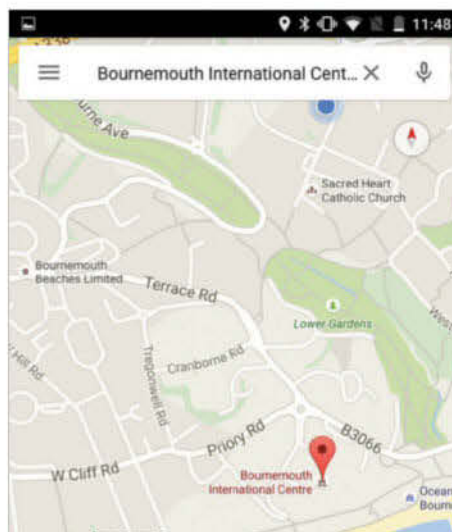
8 Extra update

If you are a real early adopter, you can already download the APK for the next update, Maps 9.9. This is a very minor update that simply swaps the black top bar with a translucent one, but it is good to be on top of any changes.



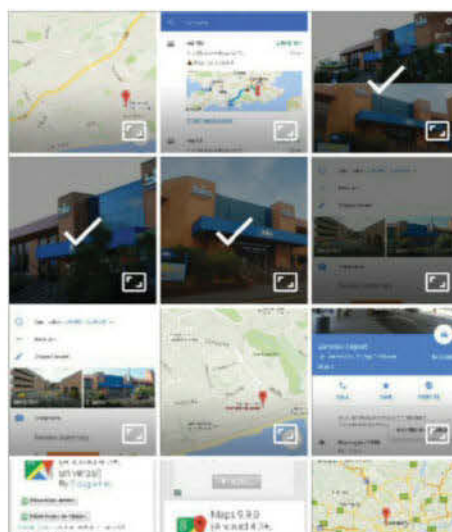
Add your photos to Google Maps

Improve the Google Maps experience by uploading your holiday snaps for other users to see



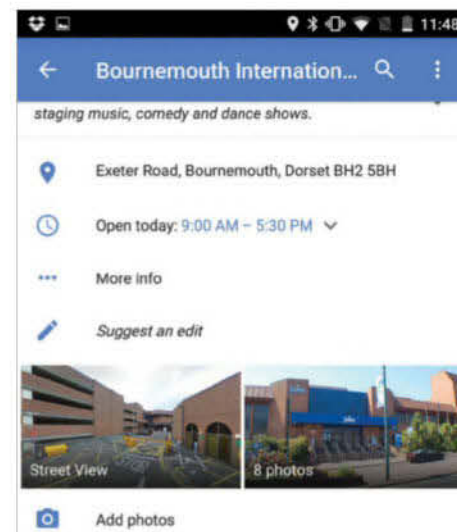
1 Find your location

If you want to share photos of your current location, tap the compass icon in the bottom-right. Alternatively, to upload photos of somewhere else – for instance, the hotel you recently stayed at – type the exact name or address into the top bar.



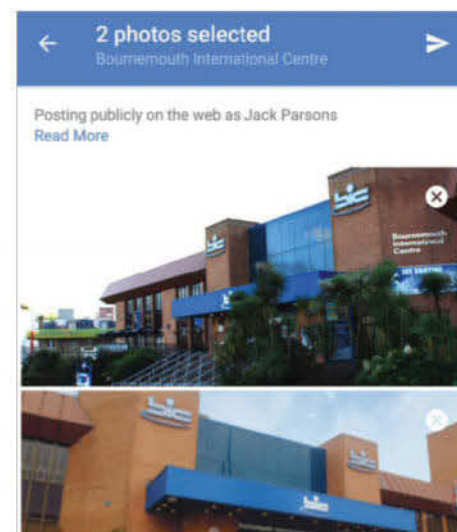
3 Select images

If you want to take photos of your current location and share them to Maps, tap 'Take a photo' to launch the camera app. If want to upload existing photos tap 'Choose from Gallery.' You will then be able to share individual pictures or upload an entire photo album en masse.



2 Add photos

Once Maps has navigated to the right place, swipe upwards from the bottom of the screen to view an info card. Here you can view other users photos, or just tap 'Add photos' to upload your own. However, this option is only available for public places, not private residence.



4 Upload your pictures

Once you've selected the photos you want to add, click 'Select' in the top-right hand corner. This will take you to the final screen where you click the arrow in the top-right corner to upload the pictures. Don't forget, these are now free for anyone who clicks on that location to see.

Apps used » Samsung Galaxy S6 Experience Works with » Android 4.0 and up

Get the S6 experience

See if the Samsung Galaxy S6 is the phone for you before making a purchase

Normally when you want to get a feel for a new phone, before you buy, you have to go into a shop and try a test model.

However, Samsung has released an app that will give you the Galaxy S6 and S6 Edge experience on any phone that runs Ice Cream Sandwich and above. Don't be fooled into thinking you're going to sup up your old phone with a quad HD display and wireless charging, however.

This app is essentially a showcase of the S6's best bits that you can test out in a controlled manner, plus a few helpful quizzes to help you decide if its the phone for you. We will show you exactly what to expect from this innovative new Samsung app.

“This app is something of an advert for the S6”

Get the full experience

This app is the closest you'll get to owning an S6 without actually owning one. So here are three things you can do to get the S6 experience



Quick Launch camera

Tap on 'Next Level Camera' and then Quick Launch. This will show you how to activate the Quick Launch setting on the S6. It demonstrates how quickly it can launch the camera app and then snap a picture.



View the options

Scroll right from the first page and you will be shown the option to discover the Samsung Galaxy S6 design options. Tap the first option and you can see the S6 and S6 Edge in 360° and the four colour options that are available to choose from.



Discover your type

The Samsung Galaxy S6 has a range of accessories that come with it. By answering a few questions in the final section, it will match you with the kind of accessories that it thinks you might like.

Try out the slick and smart S6 design

Admittedly this app is something of an advert for the S6. It is very well designed, however, and does remind you of the device's cool features, even if the only way to actually try them is to test them in the shop for real

Explore the range of features available

The Features menu takes you through the updated camera and its Quick Launch settings as well as the Fast Charge capability, the layers of security that can be found on the S6, such as the fingerprint scanner, and the quality of the incredibly pixel dense display

Explore Next Level Features

Next Level Camera >

Next Level Charging >

Next Level Security >

Next Level Display >

Use speedy arrows to access the menu

Each part of the menu can be accessed by tapping the arrow. However, if for example, you've tapped on 'Next Level Camera', you can swipe downward from that screen and jump to 'Next Level Charging' without having to come out of the menu and back in again

Quickly tilt and scroll to see menus

Tilting your phone scrolls you through the three menu options. The first is the S6's features, the second focuses on the phone's design, while the third looks at the S6's accessories. However, be careful as it is really sensitive and you can easily scroll through accidentally

Watch the moving background

The app background is a constantly moving series of semi-focused images. We wouldn't advise you to look at these for too long as they can get mesmerising. They do detract from the on-screen text quite a lot, but stop once you click on a link

App used » Snapseed Works with » Android 4.1 and up

Create Lens Blur with Snapseed 2.0

Crop, rotate and re-touch your photographs with the newly updated Snapseed app

Snapseed is one of the best photo editing apps out there and it has recently got a new update that gives users even more editing options.

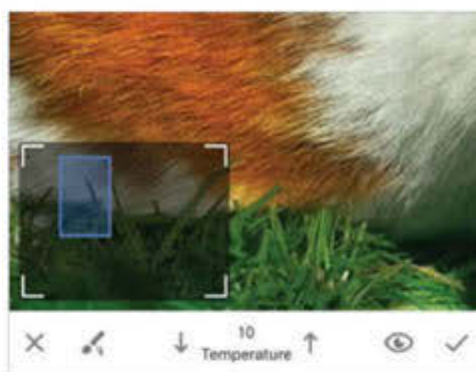
Snapseed 2.0 users are now able to create lens blur, closely edit spots and blemishes, as well as create tonal contrast in the image. Another exciting new

feature is stacking, where you can go back and undo or alter previous edits without having to undo all of the work that you've put in since. This is a superb feature for people who want to be precise, especially with their colour saturation or hues, and want to be free to play around without having to start all over again if something doesn't quite look right.

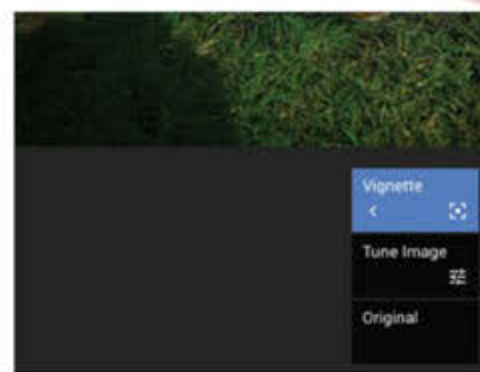
This tutorial will show you how to use some of these new features in Snapseed and how to use some of the older modes just in case you aren't familiar with the app.



- 1 Alter the brightness**
Download Snapseed from Google Play, open it and find an image. Press the + sign in the bottom-right corner to begin editing. First, alter the brightness. Tap on the wand and slide your finger left or right to decrease or increase it.



- 2 Edit in detail**
Double-tap on a particular area of the screen to zoom in and you can edit your image with accurate brushstrokes – we're editing the temperature. Move around the screen by moving the blue box in the lower left-hand corner.



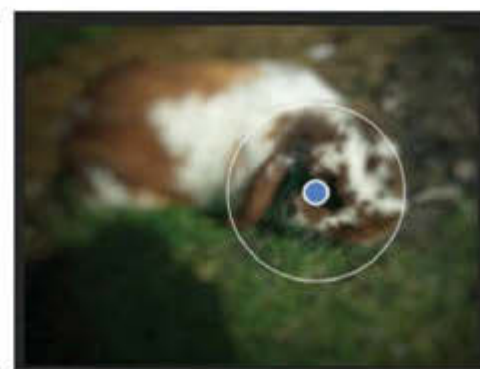
- 3 Re-do your edits**
After making your first edit and saving it via the tick in the lower right, a number one will appear in the top-right. Each new saved edit adds another to that total. If you tap on that, a menu will show so you can choose an edit to delete or alter.



- 4 Change Tonal Contrast**
Tonal Contrast is the difference between light and dark parts of a photograph. Increasing or decreasing this can make areas stand out. Press the + sign and scroll down to find Tonal Contrast. Select and use the slider to alter the settings.

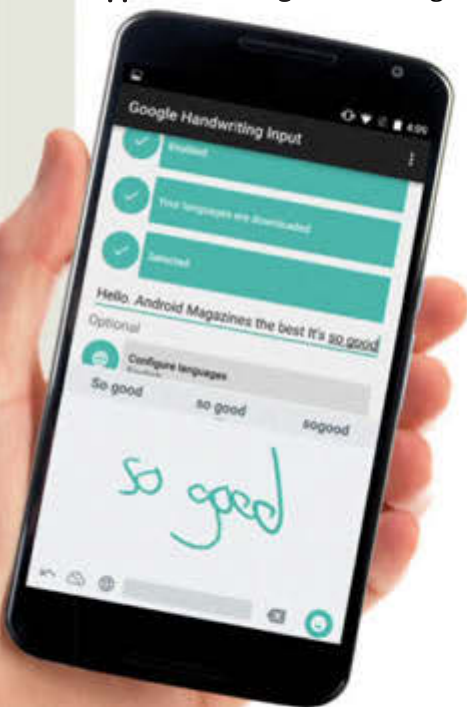


- 5 Micro-manage spots and blemishes**
Editing out details in an image can be difficult. Tap + and then Spot Repair. Zoom in on your chosen area and press the screen. The part you tap will take on the colour of the area around it.



- 6 Use Lens Blur**
Another feature is Lens Blur. Create a focal point by fading out parts of the image that are less important. After tapping +, scroll down till you find Lens Blur. Click on that and manipulate the shape until the area you want highlighted is in focus.

App used » Google Handwriting Input Works with » Android 4.0.3

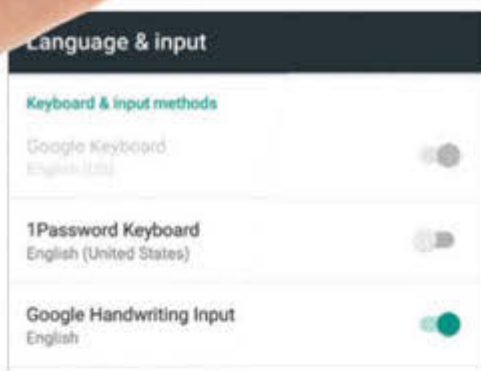


Handwrite your messages

Styluses at the ready, Google Handwriting Input offers an alternative to the default keyboard

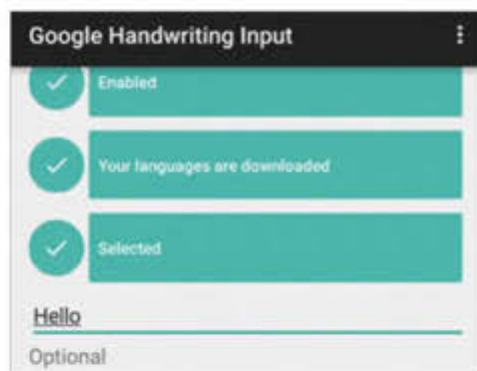
Despite the wide range of customisable keyboards available to Android users, typing into your touchscreen using your thumbs is still an imperfect way to send a message. There is help at hand though, as Google has released an app that converts your handwriting into text and can be used for everything from texting to inputting web addresses.

It works with a stylus or your finger and can be handy for people who find typing out messages a little bit too fiddly. There have been a fair few apps that have tried this, but Google Handwriting Input stands apart from them due to its recognition of even the worst handwriting. Using the same technology as the recent Android Wear update, this app can also recognise hand-drawn emoji. Read on to find out how to activate Google Handwriting Input, use it in your everyday life, and deactivate it if you want to switch back to traditional typing for a period of time.



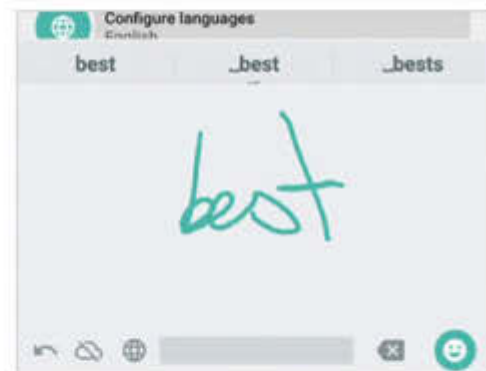
1 Set up the app

Go to the Google Play store and download Google Handwriting Input. Once done, open it and you'll see a screen asking you to 'Enable Google Handwriting Input'. Press the bold text and then the slider next to 'Google Handwriting Input'.



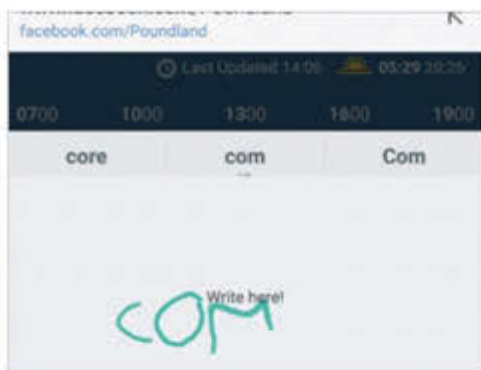
2 Activate the keyboard

That button should be lit up in turquoise, as should the button below. If not, you probably haven't selected the correct option. Tap 'Select Google Handwriting Input' and change the keyboard to 'English Google Handwriting Input'.



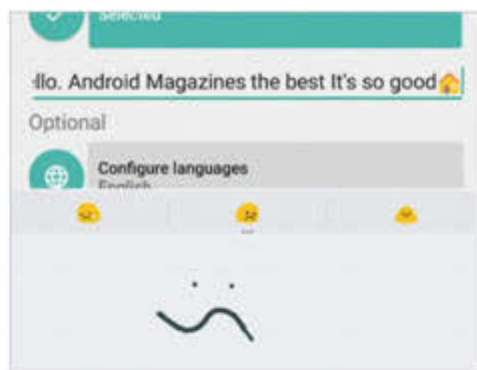
3 Start to write

Using your finger or stylus, write some words at the bottom of the screen. These should automatically appear on the line above. To change the last word, press the backward arrow in the bottom-left and the last word will be on screen.



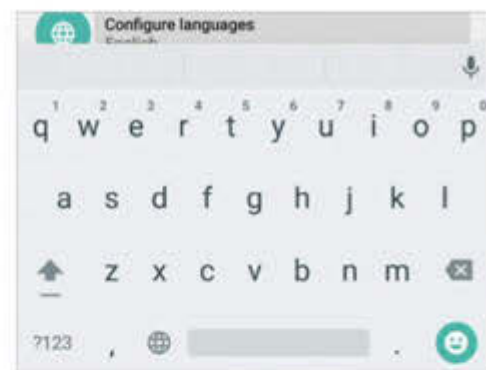
4 Input elsewhere

Now you're ready to get writing. Whether messaging or writing web addresses, you should be able to enter text anywhere you'd usually type. If you forget a dot in the .com of a website, press the back arrow, pop the dot in and it'll appear.



5 Activate emojis

Tap the circle in the bottom-right corner that contains a smiley face. This will activate emoji mode. Express yourself with a doodle and the app will give you a range of emojis to choose from. Tap the circle icon again to return to text input mode.



6 Switch to typing

If there is a word causing problems, press the globe icon to toggle between Handwriting Input and the default typing keyboard. To deactivate Handwriting Input, go to Language & input > Keyboard & input methods in Settings.

App used >> My Car Locator Works with >> Android 4.4 and up

Locate your car anywhere with ease

Fed up with losing your car in a car park? Don't worry, there's an Android Wear app for that

Have you ever lost your car in a car park? If you answered yes, then Android Wear has got you covered. It does happen, and can be insanely frustrating (particularly if it's raining), but thanks to the versatility of Android Wear and an app called My Car Locator, such problems should be a thing of the past.

It's fair to say it's not the prettiest app in the world, but it does do the job. First, park your car. Then launch the app on your watch, via the voice command "OK Google – start My Car Locator", just one button-press stores the location on your phone and adds an icon in the notification area for retrieving the position (a button press on the watch can do the same thing). This is then displayed on a satellite map view, enabling you to return to the exact spot with the minimum of fuss.

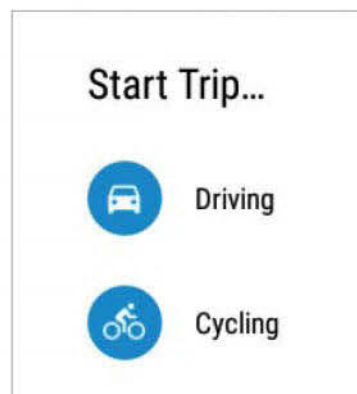
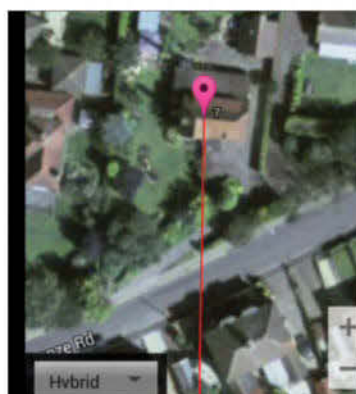
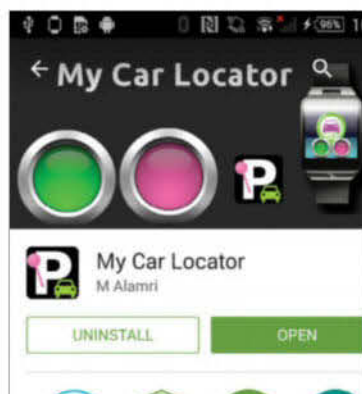
Although there is only one application in the Play store for this purpose, if you are particularly handy with the Tasker application, you could actually make your own. Configure it so that a WearTasker button-press stores your location in a Tasker variable, and an icon on your smartphone then passes that position to the Google Maps app. That way, you could even get turn-by-turn walking directions back to your car. There's no excuse for wandering a car park aimlessly ever again!



Google Now locator

Google Now actually has basic parking-location tracking built in. It uses Google Play services to determine if you are driving, and then shows a card where it thinks you have parked.

My Car Locator Store and locate your car's position



1 Download the app

To locate your car using your Android Wear device, download My Car Locator, a free app from the Play store. Versions are included for use on your phone and watch.

2 Store your spot

To store your position, launch the app on your Android Wear device and use the toggle switch at the top to save your current location, using your phone's GPS.

3 Find your car

When ready to find your car, on your watch, press the pink button. This will open a satellite map on your phone showing your current position and parking spot.

4 Track your trip

An alternative app to use is Trip Tracker for Android Wear, which records the whole of your car's journey, as well as the ending position for viewing on a map.

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Jargon Buster

Get up to speed on all the terms you will need to know when hacking your phone

OS

Short for 'operating system'. Often the Android ROM will be referred to as the OS – this just means the system files on the Android device that make up your user experience, similar to Windows, Mac OS X or Ubuntu on a desktop computer.

ROM

Stands for 'read-only memory'. In the context of Android, the ROM refers to the files that make up the operating system installed on your device. Gaining root privileges allows for replacement of the standard ROM with a custom one.

Root

'Rooting' your phone gives apps access to parts of the OS that are normally hidden from consumers. This enables you to run more powerful software and install custom ROMs on your phone.

ROM Manager

An app available from the Android Market that enables you to install a whole new version of your OS with a single click. It requires a rooted phone to use and is ideal for those new on the scene.

Titanium Backup

This app from the Market enables you to back up everything on your phone – apps, data, settings and all. It means that you can restore your phone to how it was, even after you've updated or changed the ROM.

Unrevoked

Available from www.unrevoked.com, this is a one-click tool that can be used for rooting many popular HTC smartphones.

ADB

Stands for 'Android Debug Bridge'. ADB is mainly used for software development, but it also has some uses for hacking your phone. It can be used to push files onto the system folder, for instance.

Nandroid

You might come across the phrase 'perform a Nandroid backup'. This means using a custom recovery tool to make a back-up image of everything currently on your phone: OS, apps, data, etc. It's very useful should you wish to restore your phone to its previous state later.

Radio

'Radio' refers to the software on your Android device that deals with making phone calls and data connections. Updating your radio version can bring better battery life and signal strength to your device. Some ROMs require the latest radio.

Flash

The storage in your device comprises flash memory, a type of solid-state storage. The terms 'flash' or 'flashing' mean installing new software onto your device's storage.

UPGRADE GOOGLE APPS

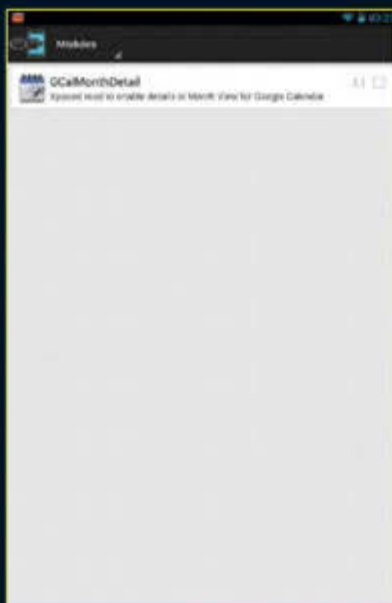


Hacks to mod Google Maps, get more from Gmail and power up Play Music

The suite of Google apps that you have got installed on your Android phone or tablet is pretty impressive, but it lacks some functionality that you might find useful. However, if you've got a rooted phone there are ways around this, and in this guide we're going to show you ten of the best hacks and Xposed Framework Modules that let you change the way some of Google's stock apps work. Everything here is fairly easy to accomplish, so long as you know how Xposed works and you've got a rooted device. We'll show you how to bypass the attachment limit on

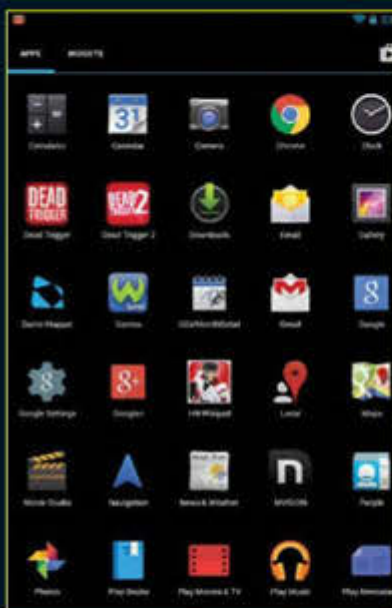
Gmail, how to make Hangouts a more viable MMS platform, and how to add extra controls to Google's Chrome web browser too. We're even going to show you how to install a pared back suite of apps that just gives you the bare minimum you need to keep your device working, letting you customise things even more. We'll assume you're familiar with how the Xposed Framework runs and that you've got it installed on your phone or tablet. If that's the case, then you're ready to tackle the tutorials on these pages head-on, so let's get started. →

31 Add monthly details to your calendar



1 Download the module
First, you need to download the Xposed mod here: tinyurl.com/lh7co7m. Once you have downloaded it to your device, tap in the box next to it on the Xposed framework app, then reboot to make the necessary changes.

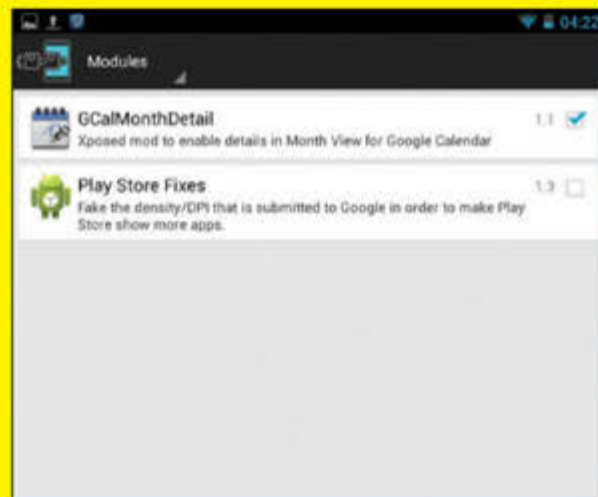
2 Phone or Tablet
If you're using a tablet then it's a good bet that you have already got details on your month view, so this is definitely a better hack for phone users and lets you see what you're doing at a quick glance.



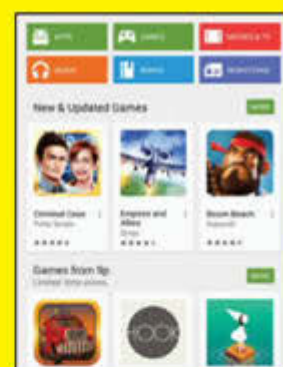
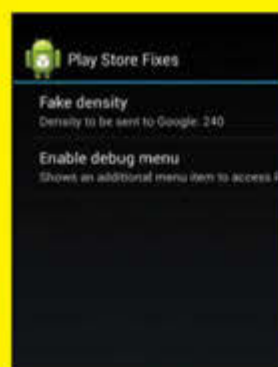
3 Find the app
Once your phone or tablet has rebooted, head to your apps drawer and look for the newly installed app. When you've found the icon, which is a white calendar image with a scribble on it, tap to open it up.

4 Tweak the sizes
Once the app is open you can tweak a few font-sizes to set everything to your liking. When you're done, open up your calendar app and set it to month view, you should now be able to see all of your event details.

Fix the Play store to show more apps



1 Grab the module
Install the following module on your device: tinyurl.com/q38tgsa. Then follow the setup process. This time you'll need to head back to Xposed to tweak the settings.



2 Fake the density
The fix here is to fake the pixel density that your device sends to the Play store to give you access to more apps. It'll be set at 240, but you can set it higher or lower if you need to.

3 Head to the store
Open the Play store and you should find that some apps that were blocked are now available. It's useful if you're running an older device that doesn't have a high definition screen.

GET A SMALLER SUITE OF GOOGLE APPS

Download Minimal Google Apps from this URL: tinyurl.com/mfs4hhv. Flash it and you will have the smallest installation of apps that will keep your device running.



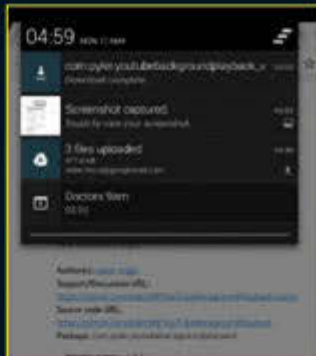
Get 'OK Google' for third-party launchers



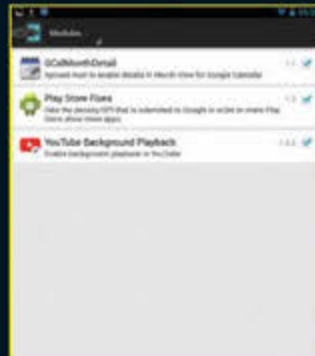
Enable background playback in YouTube



1 Get the module
The YouTube app doesn't let you play in the background. To fix this, go to: tinyurl.com/lh6xxnj and download the module.



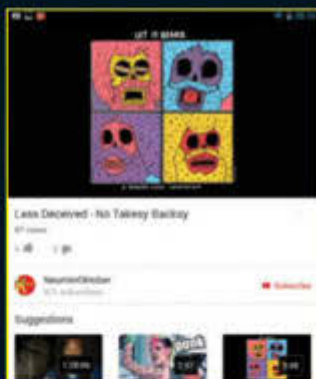
2 Install it
Next, install the download. Then go to the Xposed framework app and tap the box next to the module.



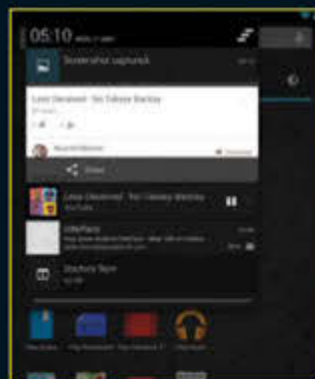
3 Time for a reboot
When you've ticked the box, reboot your device to make the changes stick, then open the YouTube app.



4 Search for a song
Next, search a song as you would normally. There's no extra setup needed. If the module is working, it's simple to test.



5 Start to play
Start the song playing in the app and then navigate to your homescreen. If it has worked, the song will keep playing.



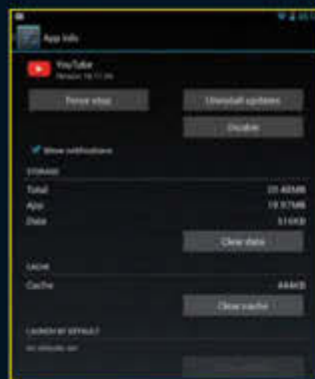
6 Notifications bar
You'll see the YouTube icon in the notifications bar. You can drag this down to pause or skip whatever you are listening to.



7 Check other apps
Open Chrome and some other apps to make sure that the playback is working properly. Then lock your device.



8 On the lock screen
You'll see an icon on your lock screen showing the video being played and a pause button to stop it without unlocking.



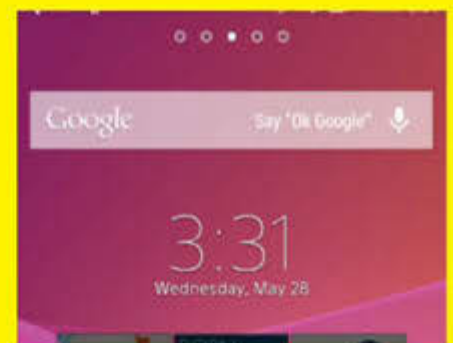
9 If it didn't work
Check the version of YouTube you're running. You'll need the most up-to-date version, so ensure it's installed.



1 Do you need it?
If you're running a third-party launcher on your device, then there's a chance the 'Ok Google' functionality doesn't work. This is something that you can get round with another Xposed framework module. To get started, you need to download the module (tinyurl.com/lhwjxwp).

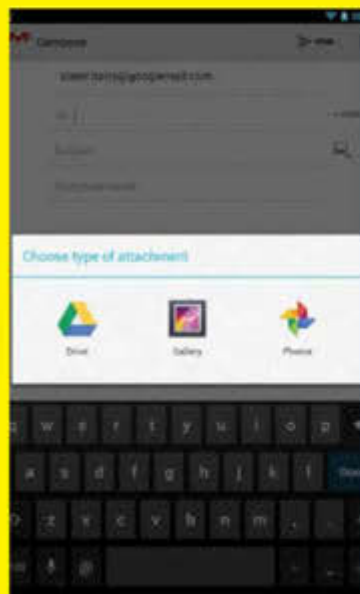


2 Install as before
Bear in mind that you need to be running a version of Android based around 4.4, and a recent version of the Google Search app for this to work. Install the module as you normally would. If it doesn't manage to parse properly, then unfortunately it's not going to work.



3 Try it out
Once the module is installed you should be able to say 'okay Google' to any microphone icon to access voice search instantly. You can change the settings on an app-by-app basis as well, which is particularly useful if you want to set up apps to use while you're out driving.

Increase Gmail's attachment size limit



1 It's module time

As before, go to this link: tinyurl.com/opzcc76 and download and install the module. Check the box in Xposed framework, then reboot your phone or tablet. Once you've rebooted, the module should kick in and you're good to go.

2 Check it worked

The easiest way to check that everything has worked is to try and send something bigger than 5MB through your Gmail app. Remember that this will only work for the AOSP or Play store mail app and not any third party apps.

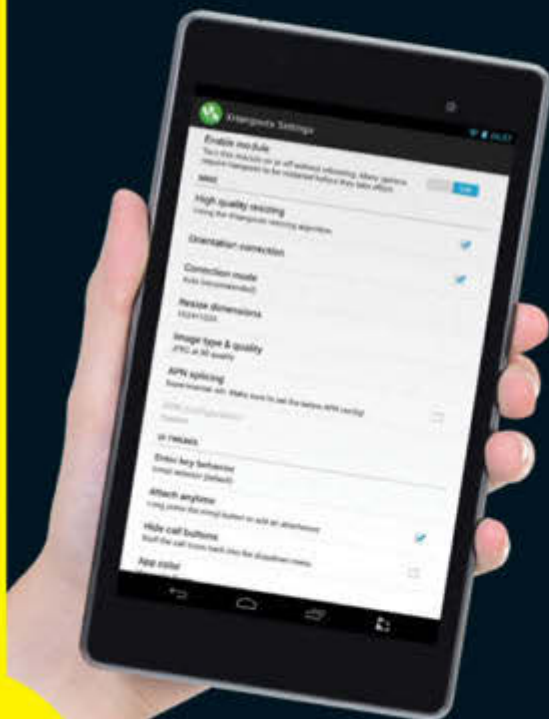
3 Attach the file

Attach a file in the same way that you always have. The module should have now raised the limit of the file size to 25MB, so if you're trying to attach something larger than that, unfortunately it is not going to work properly.

4 Check your version

If it doesn't look like the module is working, check which version of the Gmail app and Android OS that you're running. It should work fine with Lollipop builds, but there's a chance that pre-KitKat devices won't be able to run it.

Add better MMS functionality to Hangouts



1 Another module

Go to the XHangouts module (tinyurl.com/p7oe242) and download and install as usual. After the reboot has taken place head back to Xposed.

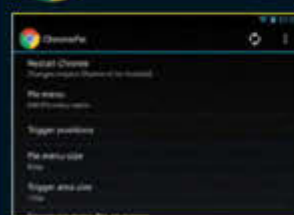
2 Check the settings

Once you are in Xposed, tap the module to open the settings. Now you can tweak how your Hangouts deals with MMS.

3 Give it a try

Check everything has worked by sending yourself some MMS messages. Then play with the settings to see what else you can do.

ChromePie controls



1 Install and reboot

Head here: tinyurl.com/nqp42k6 and follow the installation process. When it's done and your device has rebooted, open Xposed and tap on the ChromePie module to change the settings to your liking.



2 Tap to use

When you're in Chrome, push a finger on the left, right or bottom side of the screen to open up the pie. You can change what options appear in the Xposed Module's settings and add extra slices.



3 Too small?

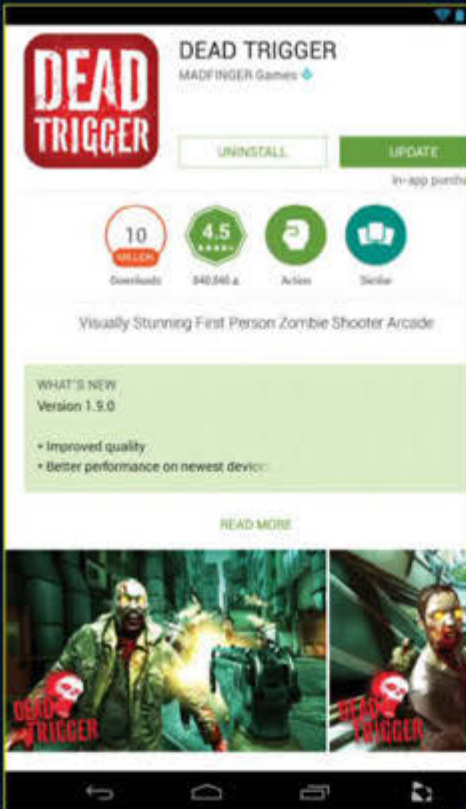
If you can't get the pie to pop up, go to the settings and make the trigger area larger. You can move the positions if they're uncomfortable. Restart Chrome to make the changes permanent.



Show the full update log on your installed apps

REORGANISE GOOGLE PLAY MUSIC

This link tinyurl.com/lk2akqb will enable you to download a module that lets you change the default opening screen of your Play Music app.



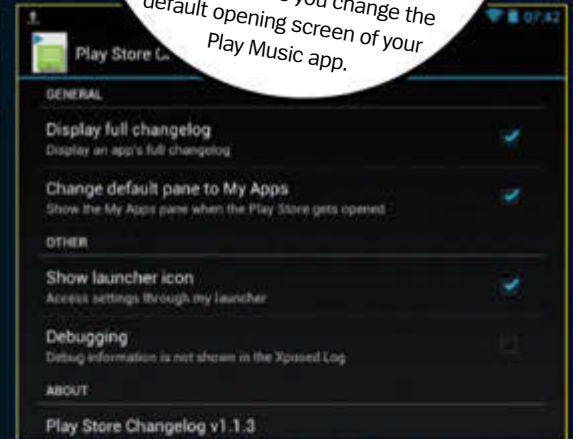
1 What it does

This module changes it so that the full changelog of your installed apps is shown in their My Apps page.



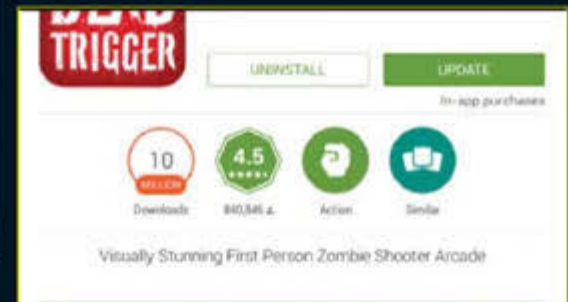
2 It's module time

Head to this link: tinyurl.com/mmp262v and download the Xposed Module. You'll need the latest version of the Play store too.



3 Set your preferences

Make sure the changelog box is ticked. You can set it so the Play store automatically opens to My Apps.

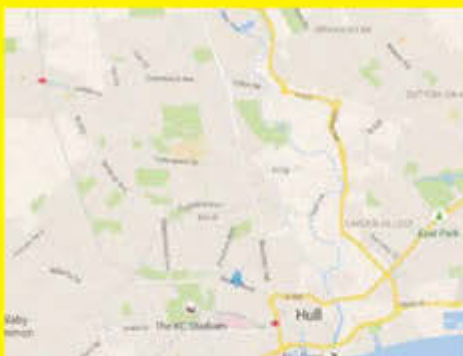


4 Check it worked

Go to the Play store and check one of your apps. The most recent changelog should be displayed in full.

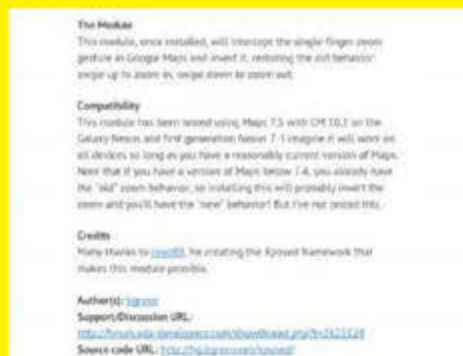


Invert double tap zoom in Google Maps



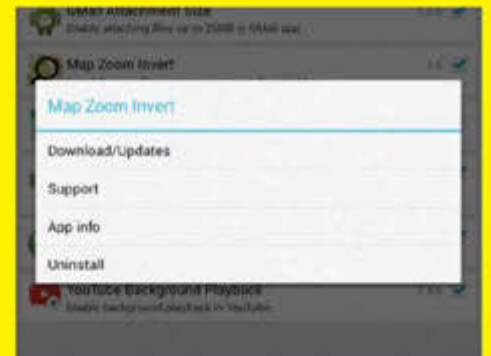
1 The double tap

Google Maps includes a one-handed zoom option. You double tap on the screen and drag a finger up to zoom in and down to zoom out. If you fancy reversing this, you're going to need to install this Xposed Module (tinyurl.com/lrjpxe4).



2 The module

Install the module. Once you've rebooted, head to Google Maps. Try a double tap and if everything's worked you now zoom in by swiping down and out by swiping up. If not, you might have an incompatible version of Maps.



3 Change it back

If you want to change your settings back, just uncheck the box next to the module and then reboot. There are no other settings to tweak here. If you want to delete the module, long press it and then tap uninstall.

status update

Which devices are best for the hacking scene?

Galaxy S6 Edge

Rooted? Yes

Active Development:

Medium

Available to root the day it won't on sale, try XDA member amk19's camera mod to boost photo and video quality.



HTC One M9

Rooted? Yes

Active Development:

High

HTC's latest flagship has been rooted and numerous ROMs, mods and kernels are now available for it.



Nexus 7

Rooted? Yes

Active Development:

High

While Google may have discontinued this tablet, if you can get hold of one, it's the ideal device for new hackers to practise on.



Moto 360

Rooted? Yes

Active Development:

High

Try the Gohma 2.3 smartwatch ROM to boost the battery, reduce lag and improve overall performance.



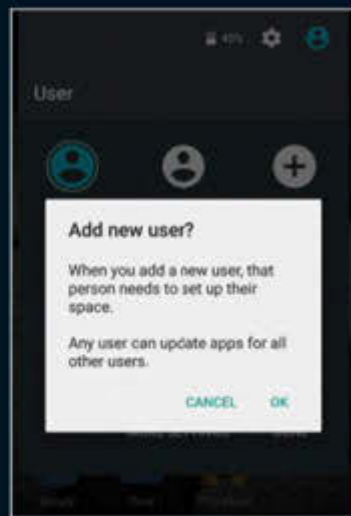
Tips & Tricks

Add users to your Android device

Need to give your kids or a friend access to your Android device, but don't want them to access specific apps? It's an increasingly common problem and one which has been dealt with in Lollipop.

Creating a guest account with limited access is simple and perfect for setting up a sort of 'child mode' or a guest profile that might give access to a particular game or specific app. Start by dragging down the notification area and tapping the profile icon to view the User screen.

From here, tap the Guest option to switch to the preset guest account.



Setting up a guest user account is simple

Before you do this, however, you might wish to open More Settings and tap the Settings icon against the guest account to disable the ability to place a phone call.

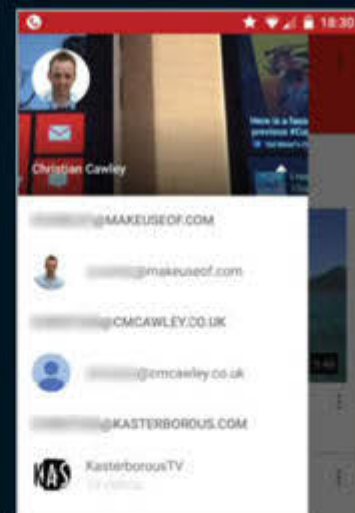
For a customised guest account, tap the New user button. Android will switch to the new profile, where the new user should log in to their account. As the device's main user, you can uninstall their apps and even remove the account at any time (More Settings>Settings).

Use multiple Google profiles

If you use more than one email address that is hosted by Gmail, you may previously have relied on a third party email app to enable easy access to the account. But you may know that the Gmail app supports Gmail and hosted accounts.

Similar support is found in other apps too. For instance, anyone with multiple YouTube accounts can access them using the YouTube app, assuming the additional accounts match those that have been added to your phone. If not, simply tap the Add account button in the YouTube profile menu and then add all of your relevant details.

Switching between accounts in YouTube is as easy as it is in Gmail. Having multiple accounts on your phone has little impact on your ability



Multiple profiles in YouTube can save a lot of messing around with third party apps

to upload videos from the device either, other than checking that you are uploading to the right account.

Pin apps to stop wandering fingers

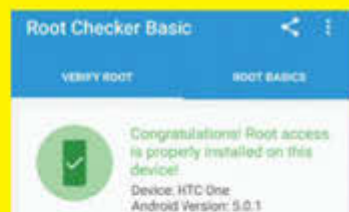
Children can be discouraged from getting adventurous with your Android device and making calls, browsing the web and viewing material you would rather they didn't using the app pinning feature.

To activate this feature, open Settings>Security and scroll down to Screen pinning. By default this will be switched to Off, so change this by flicking the switch to On.

quick hacks

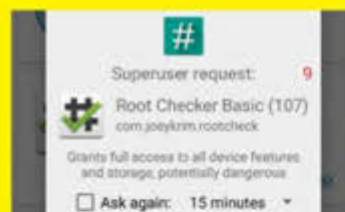
Is your phone really rooted?

Rooting Android can be simple and it can be complicated; it all depends on the handset that you are using. If you have rooted the device only to learn that the app you want to use still won't run, it's time to investigate a bit further and see what the problem is.



1 Checking root was successful

The first thing to do is install a root checking app, such as Root Checker Basic from Google Play. Once installed, run the app, tap Verify Root and wait for confirmation.



2 Is SuperSU installed?

One mistake first-time rooters make is to forget to install a super user tool such as SuperSU, which will manage an app's root access. Head to Google Play and install it before starting device rooting.



3 Reinstall the app you're using

If an app needing root privileges still won't run after rooting, reinstall it. Open Settings>Apps, select the app and tap Uninstall. Then restart and reinstall.

Share your tips

Got a great tip, or found a cool shortcut? Let us know!

» facebook

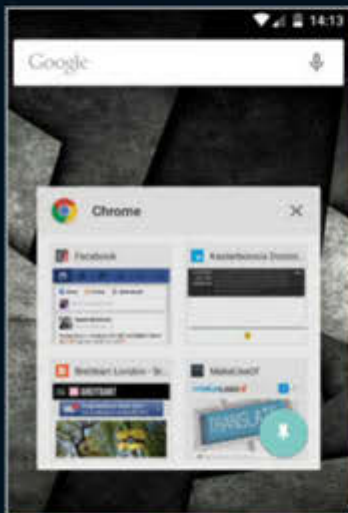
[/littlegreenrobot](#)
Like us on Facebook and join our online community

» twitter

[@lgrobot](#)
Follow us on Twitter to send us your tips & tricks

» email

qa@littlegreenrobot.co.uk
Discovered anything good about your Android phone? Let us know!



Pinning apps will stop the home and back buttons from being activated

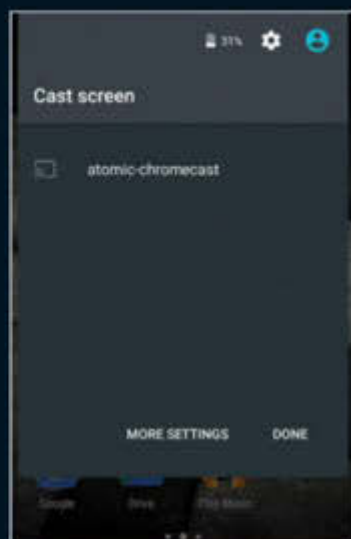
With this done, tap home and then double-tap to view the Overview screen. Here, on each app window, you'll see a small turquoise disc with a pin icon. Touch this to pin the app, thereby locking the display in a single view. This can be disabled only by pressing Back and Overview at the same time, and is ideal for locking the display to games which can often be disrupted by clumsy fingers.

Unlock the power of screencasting

One of the most useful enhancements in Lollipop is the introduction of screencasting to Chromecast which enables you to mirror the display of your Android device to your HDMI TV. This can be used in various ways, from running Android device-based presentations to playing videogames on your big screen TV.

You may find that there is some slight lag between your fingers and the HDMI display, however, much like that experienced on games consoles with wireless controllers.

All in all, it is a useful feature, one that can be enabled by opening the notification area and selecting Cast screen. As long as your Chromecast is switched on and connected to the same Wi-Fi network as your Android



Screencasting your Android display is easier than ever with Lollipop

device, all you need to do is tap the Chromecast's name to start mirroring to your TV screen.

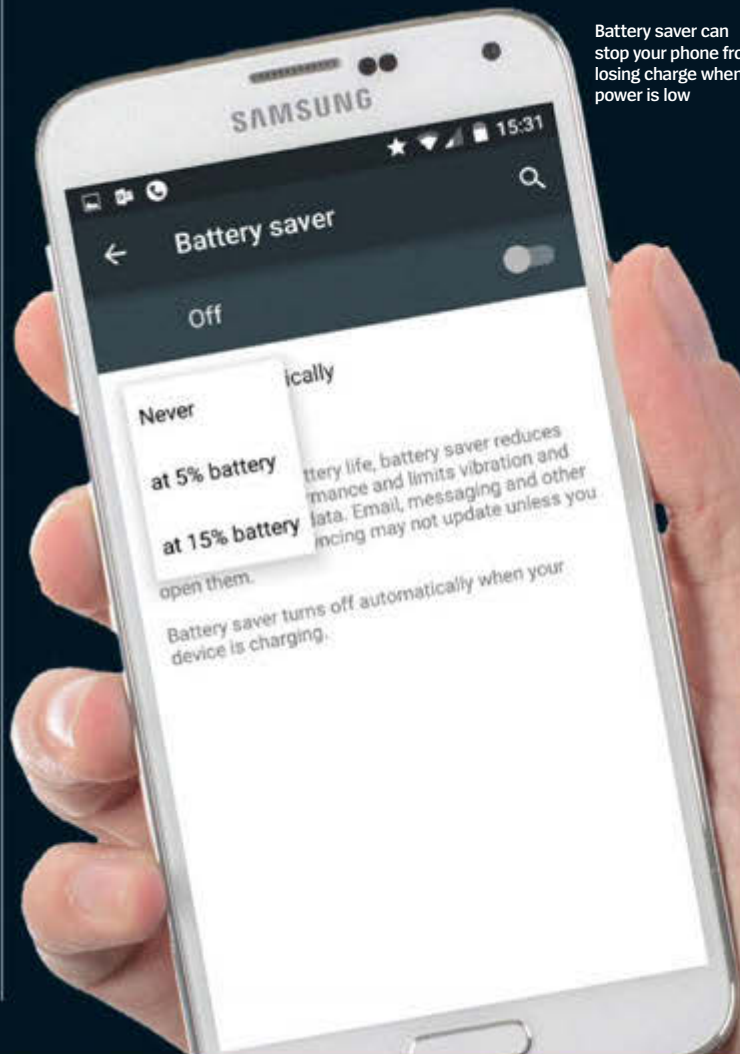
Get rid of battery saver apps

Another often overlooked secret of Lollipop is the battery saver mode, which can be activated easily via the notification area. Here, tap the battery icon to view the remaining

charge on your device and observe how the battery has been used since the last charge. You will also notice that you are given a target end time for when the charge is expected to fully run out.

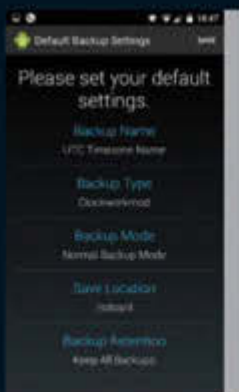
To activate, select the Battery saver option in the menu. You'll see that it is set to Off by default, so tap the switch to On. You should also

tap the 'Turn on automatically' option to select between the Never, at '5% battery' and at '15% battery' options. If we are honest, battery saver works best at 15 per cent. By the time the charge has dropped to five per cent, there is not an awful lot of life to save, so be sure not let it get too low before your phone needs to be rescued!



Battery saver can stop your phone from losing charge when power is low

Hacking the easy way Get great new features without getting your hands (too) dirty

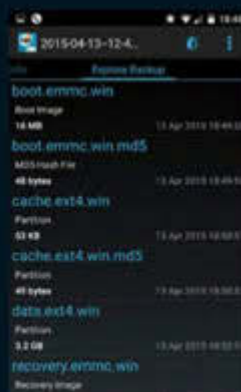


Online Nandroid Backup Pro

Price: £0.60/\$0.99

From: Google Play

Need root? Yes
Requiring a rooted device with BusyBox installed, this app creates online nandroid backups, images of your phone that you can restore following a system failure or if a malware scenario happens to occur.



Nandroid Manager Pro

Price: £1.21/\$1.99

From: Google Play

Need root? Yes
After making a nandroid backup and deciding that you need to restore something that you just deleted, use Nandroid Manager Pro to browse the backup and extract particular files.



G Cloud Backup

Price: Free + IAPs

From: Google Play

Need root? Yes

A simple app that backs up your data to a secure cloud storage account. Contacts, messages, photos, videos, music, documents, call logs and more can be synced free of charge, so you will have anything and everything safely backed up.

Works with >> OnePlus One Difficulty >> Intermediate

Install OxygenOS on OnePlus One

Try out OnePlus' CyanogenMod-slaying custom ROM for a closer to stock Lollipop experience

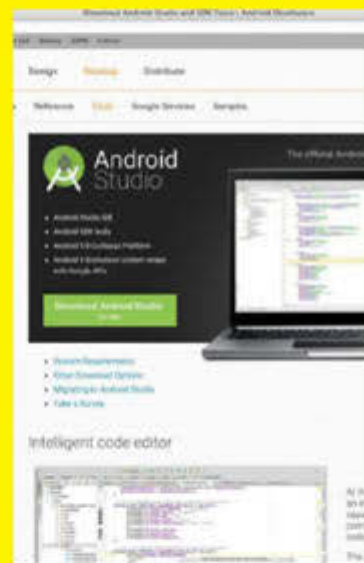


We are going to start this tutorial off with a very big proviso... At the time of writing, the only build of OxygenOS available to download is designed specifically for the OnePlus One. That doesn't mean that you can't try and install it on your Android device, but it does mean that there is a very good chance that it's not going to work at all.

The instructions here will walk you through installing the OS on the OnePlus One, but they should technically work on any device that you have available. All you are doing is flashing a ROM, wiping your device, and then installing the new OS. But, and this is a pretty big but, there is a fairly solid chance that you're not going to be able to get your device to boot once the new OS has been installed on it.

There are a number of reasons for this, but the main one is that OxygenOS isn't an open source operating system. It's designed to work with the hardware of the OnePlus One and there are no hacks readily available at the moment that will let you tweak the insides of the software to make it fit on your device.

With that in mind, you are more than free to see if installing the OS will work, but you should be aware that there's a high chance that it's not going to work very well. Before you start, you will need a PC or Mac for the installation process. Once you have got everything together you are ready to begin, so head to Step 1.



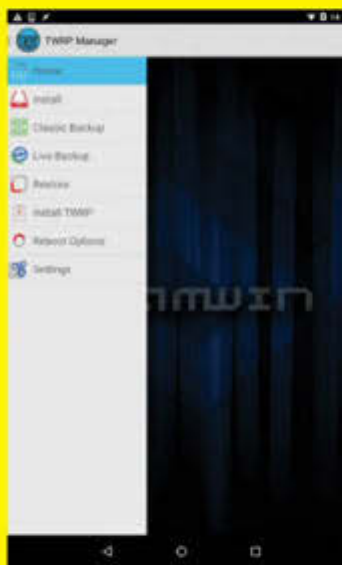
1 Get the basics

This tutorial is going to assume that you are already pretty savvy with tweaking operating systems and that you have got Fastboot and ADB installed on your device. If you don't, then it's best to go and get them installed before you begin. Once that is done you will be ready to go, so move on to Step 2.



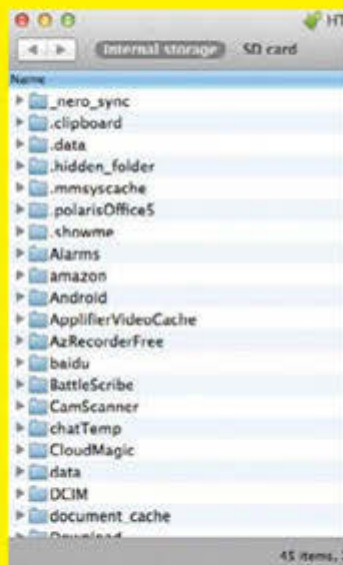
6 Back to flash

Now you need to stick the OxygenOS file onto your device. First unzip the file that you have downloaded. Inside you will find another ZIP file called 'oxygenos_1.0.0.flashable.zip'. This is the one you want to stick onto your device. Plug it back in to your PC and then drag and drop it into place.



2 Make a backup

Next you will need to make a TWRP recovery on your device. This is absolutely essential, doubly so if you are not installing onto a OnePlus One. If you haven't got a backup then there is a chance that you are going to end up with a bricked device. So it is definitely best to cover yourself.



3 Install the backup

Add the backup to your device. You'll need Android File Transfer to do this on a Mac, as well as the USB cable that came with your device. Reset your device into recovery mode first, then connect it to your computer. Next use your computer's terminal.



4 Use the terminal

We will assume you've got your bootloader unlocked. With your Mac's terminal open, type in: `./fastboot flash recovery <recovery.img>` then `./fastboot reboot`. On PC type: `fastboot flash recovery <recovery.img>` then `fastboot reboot`. Replace `<recovery.img>` with the name of your recovery.



5 Download the OS

Next, head over to this link: tinyurl.com/omqvint and download the ZIP files of the OS itself and the feedback app. You will need to flash the feedback app once you've installed the OS, so just put it somewhere safe on your desktop for the time being until you need it at a later point.



7 Reboot to recovery

Once you've put the OS onto your device, you'll need to reboot again into recovery mode. You'll need TWRP installed for this bit as well. When you're in recovery mode, you'll have to wipe all the data from your device, so ensure you've got that backup ready and waiting.



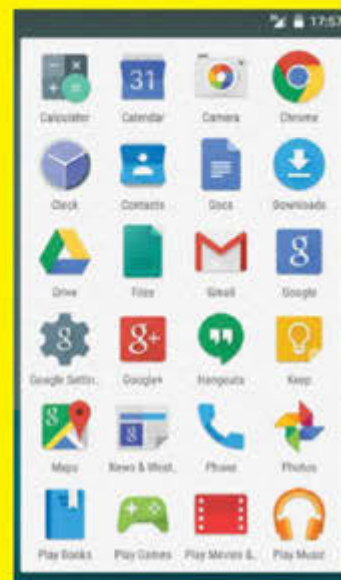
8 The wipe's finished

Once the wipe is done, it's time to flash the OS. Find it in TWRP, then tap to confirm the flash. It might take a while to install but once it's done your device should reboot automatically and, all being well, you should now have OxygenOS running on your device.



9 Add the Feedback app

Now you should install the Feedback app. It's not essential, but it lets you send error reports to the OxygenOS team and lets them build a better experience based on user feedback. You'll need to accept apps from unknown sources and sideload or download the file.



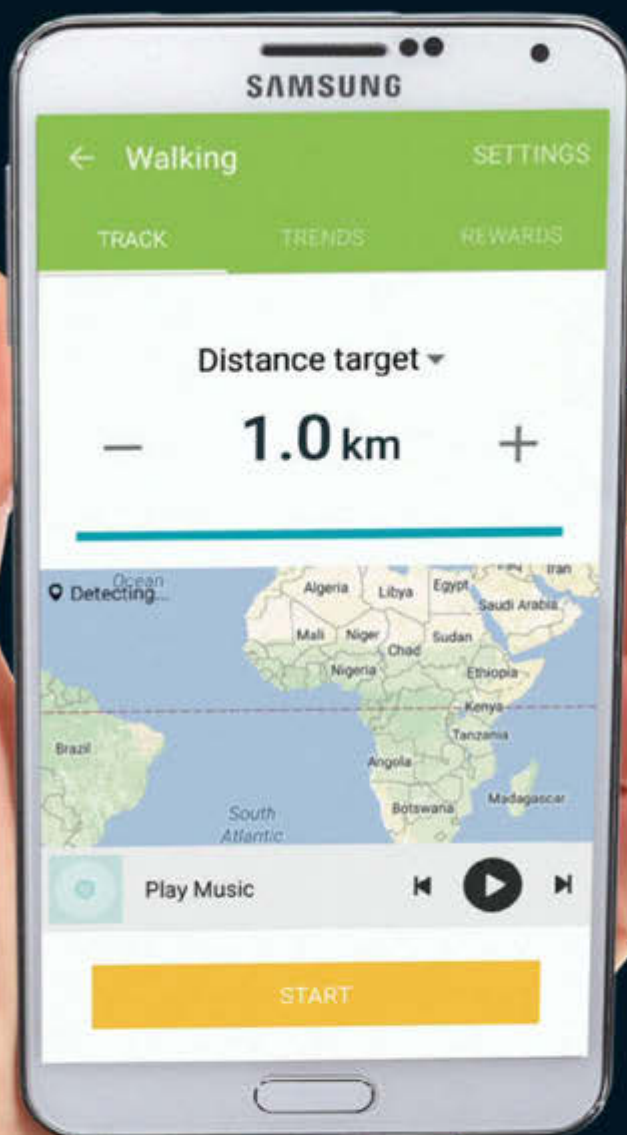
10 Good to go

If you're running the tutorial on a OnePlus One then you should be up and running at this point. If you're not, then hopefully the whole process hasn't gone too badly. And if it has, then we hope that you have got your backup ready and waiting to restore your phone back to full working order.

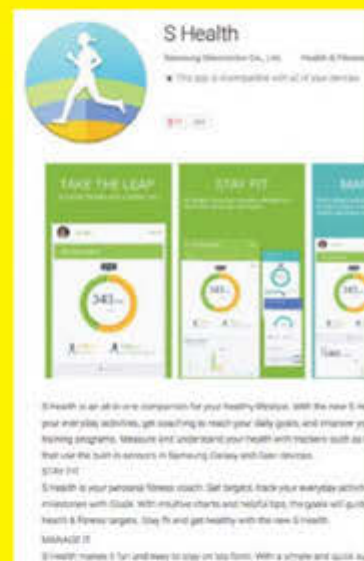
Works with » Select Samsung Galaxy devices Difficulty » Intermediate

Add Galaxy S6 Health to older phones

Get healthy by porting the latest Galaxy S6 Health app to your phone

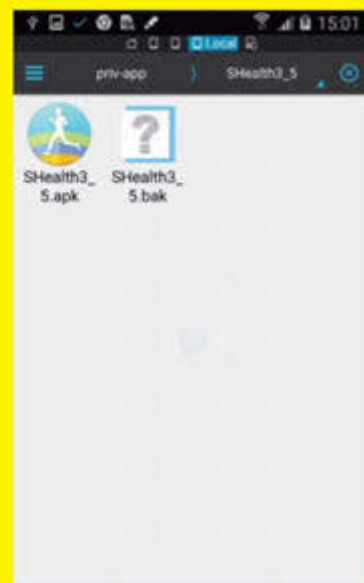


There are many new and improved hardware features in the Galaxy S6 which make it one of the very best Android phones that you can buy, but we should not ignore the improved software that has been included. Health is a major focus for many mobile devices now, and with improved sensors it makes perfect sense to aim for the very best tracking software you can use. The Galaxy S6 Health app is not widely available at this time for older devices, although that may change in the future, and so you will need to port the latest version to your device by following some relatively simple steps. To do this, you will need to ensure that your phone is rooted before you start and that the relevant permissions have been added. We will be changing the properties of files and moving them to folders that are normally not accessible, so having everything prepared beforehand will help. Once completed, you will be able to test how well the software works on your device and if there are any problems, we will explain how to ensure that every single part of the Health solution works for your device. Most Galaxy phones are capable of running the S6 Health app – we used a Note 3, and it should be fine on the Note 4, S4 and S5, but running it on an S3 may pose some problems for you.



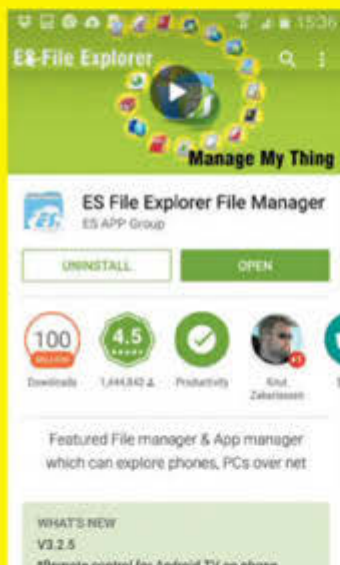
1 Is it available?

Before you follow the process to port the S6 Health app, go to Google Play and check to see if Samsung has released the latest version for your phone. Samsung recently made it available freely, but it only works on a small number of models at this time so it's best to check before you begin.



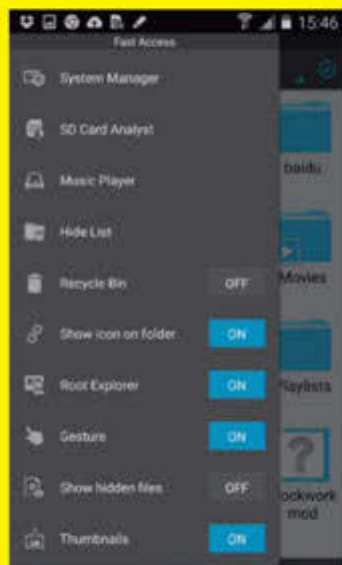
6 Time to move

Go back to the new file that you downloaded earlier and use ES File Explorer to move it to the 'priv-app/S Health...' folder that you have just accessed. It can sit alongside the original, but it is probably cleaner to remove that and leave this one on its own so there is no harm of getting confused.



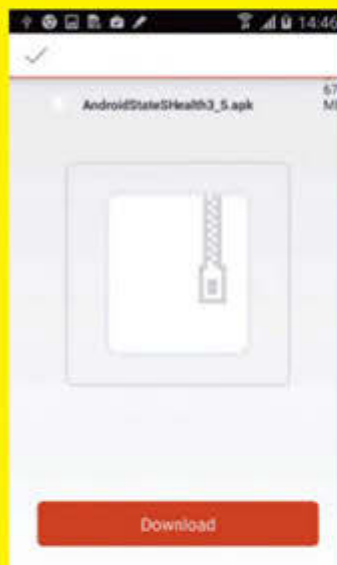
2 The file manager

Go to Google Play and search for and install 'ES File Explorer File Manager'. This is a very sophisticated app which works extremely well with rooted devices, so it should be your first option to go to when you have a requirement to amend or move any system files.



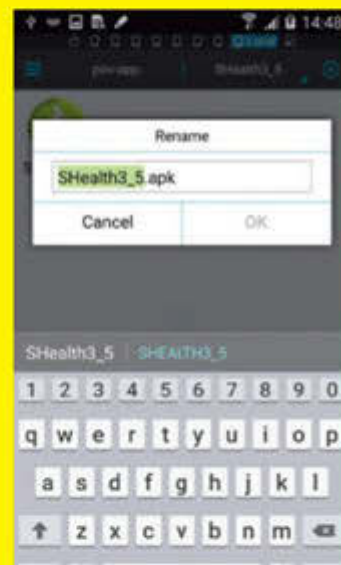
3 Set root access

In the file manager, tap the top-left hand icon and scroll down until you see the Tools option. When you tap this, the number of options will expand and you will see Root Explorer as one of them. Tap to switch it to ON and you are now ready to properly get started with the health app.



4 Download the app

Search online for 'Galaxy S6 S Health apk' which is available from a number of different sources. Make sure you're downloading from a reputable repository to stop any harmful files being installed alongside it. Ideally, download it directly on your phone and then save to an expansion card.



5 Find the original

In ES File Explorer navigate to the 'priv-app/S Health...' folder on the internal drive and then rename the S Health file to something different. We would suggest changing the extension to .BAK and then copying it to a different folder to ensure that it is kept totally safe to use later.



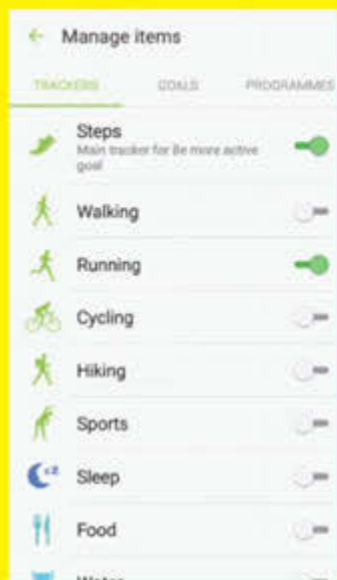
7 Change the permissions

Tap and hold the file and then check that the permissions are set to rw-r--r. You may also want to double check the folder permissions so that they will work with the app. In theory, they will be set correctly because the original Health app was already there.



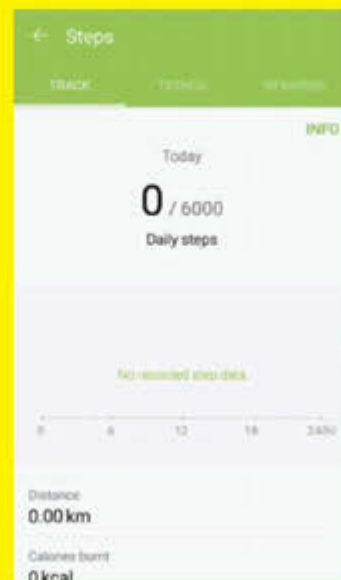
8 A quick reboot

You will now need to reboot your phone for the new S6 Health app to work. If you try to run it without doing this, you will receive a failure message on screen. Once the reboot has been completed, you should be able to see the new Health icon located on your homescreen ready to use.



9 Set it up

You can now open the new S6 Health app and explore all of the different options that are inside. There is a lot to take in at first, but if you take your time you will be rewarded with a fitter body and a much healthier lifestyle. It will be worth the effort and you have total control over how you do it!



10 Track your steps

If your phone is struggling to track your steps with the new app, then search for and download the Health Service app which will offer the required features to enable full tracking. Just add it to the same folder as described in the previous steps and you should be able to track your steps more easily.

Works with >> Android 2.3 Difficulty Level Easy

Lock down any app

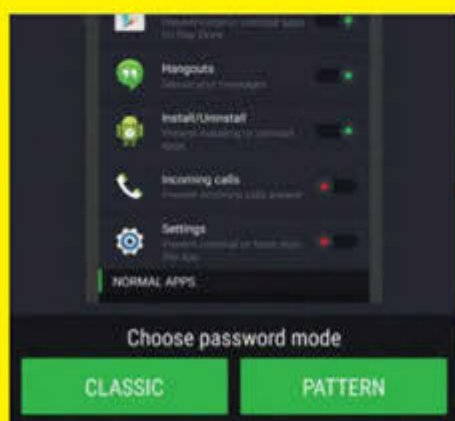
Make sure your private information remains that way, by password-protecting all of your apps

Most of us store lots of personal information on our Android devices – from Amazon and eBay accounts, to work emails and SMS messages. Obviously, you'll want to make sure all this personal information remains private and sometimes a simple, password-protected lockscreen doesn't feel like it's giving you the security you need.

Lockdown Pro is an app that adds an extra layer of security to your personal information, by letting you password-protect any app installed on your

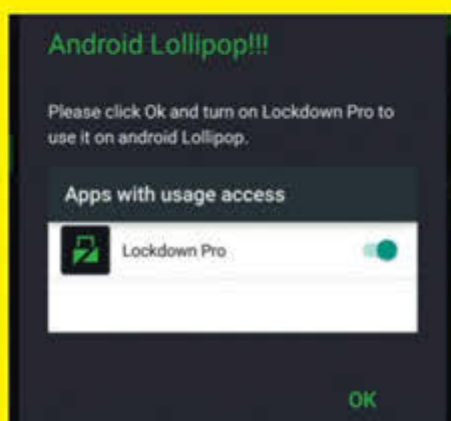
Android device. Lockdown Pro also has some useful additional features, including auto locking and unlocking. This means you can tell Lockdown Pro to automatically lock or unlock your apps whenever certain criteria are met, for example, getting Lockdown Pro to automatically release all of its locks when it detects that you are connected to your home network.

You can grab Lockdown Pro for free from the Google Play store to get started.



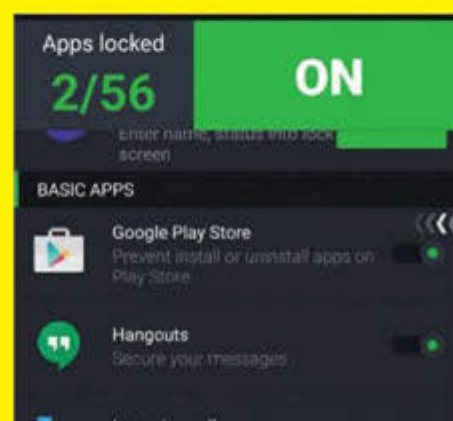
1 Create a password

Launch Lockdown Pro and first, create a password. Choose from Classic where you secure your apps with a PIN, or Pattern mode where you unlock your apps by drawing a pattern on screen. Tap the mode you want to use to create your password and enter your email address.



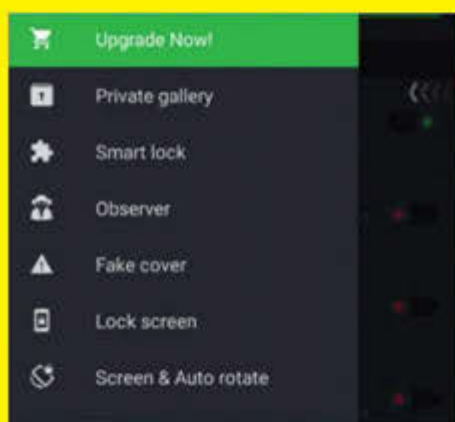
2 Lockdown Pro for Lollipop

If you're running Android Lollipop you'll see a popup asking you to enable Lockdown Pro for Lollipop. If you see this, tap OK and then tap the slider to push it into the ON position. Finally, tap OK again and Lockdown Pro is ready to use.



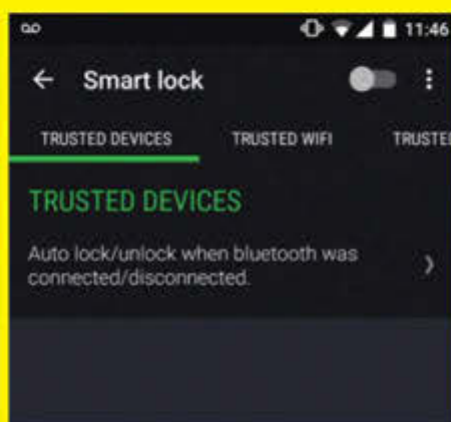
3 Lock your apps

Return to the app's main screen. In the upper-left corner is the total number of apps installed on your device and how many of these are locked. Scroll down the list of apps and tap any you want to lock so its slider changes from red (unlocked) to green (locked).



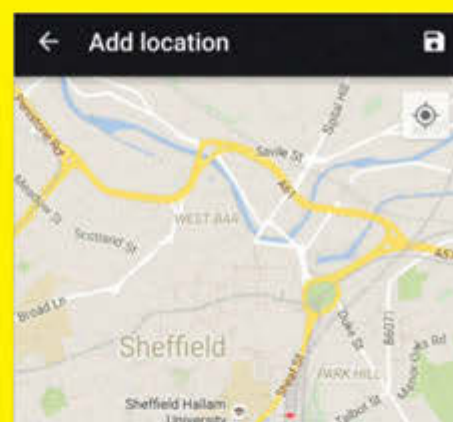
4 Additional features

Once you've locked some apps, try launching one so you can see what happens. In addition to this locking functionality, Lockdown Pro has lots of additional features that are worth exploring, so relaunch the app and tap the lined menu icon in its top-left corner.



5 Smart locking

One useful feature is Smart lock. Smart lock lets you tell Lockdown Pro to auto lock and unlock your apps whenever it detects certain devices over Bluetooth and Wi-Fi signals, or that you're in a geographical location, for example, at home. Select Smart lock from the menu.



6 Bluetooth, Wi-Fi and location

Select one of the three tabs, then tap the +. If you choose Trusted Devices your device scans for Bluetooth-enabled devices; if you select Wi-Fi it'll scan for networks. Trusted Location takes you to Maps to choose a location for auto lock.

Works with >> Android 5.0 Difficulty Level Easy

Fix Lollipop's ColorFade Memory Leak

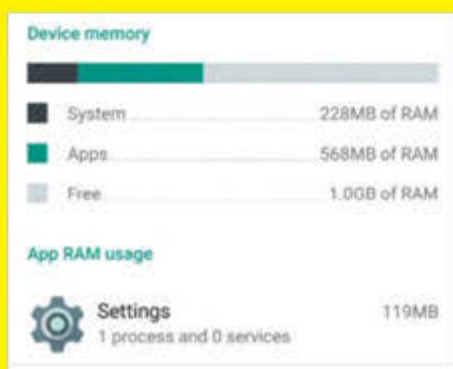
Do your apps keep crashing? You may be experiencing the ColorFade Memory Leak

Even though Lollipop is the latest version of Android, it does have been suffering a persistent memory leak that's causing problems for some Nexus users. This ColorFade Memory Leak prevents devices from releasing memory properly, so you eventually run out of space. Users have reported apps crashing, random refreshing and reloading of the homescreen, and a drop in overall performance. Although future releases should fix this bug, you can fix it now by downloading the Xposed for

Lollipop framework and then grabbing an Xposed module that patches up the memory leak.

To take advantage of this fix, you'll need a rooted device running Lollipop and a file explorer app such as ES File Explorer.

Note that Xposed for Lollipop is currently in alpha, so it isn't as stable as previous releases. This means it's absolutely crucial that you create a full backup before attempting this fix.



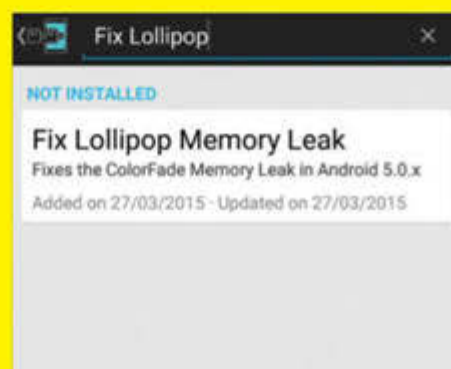
1 Are you being affected?

To gauge whether your device is being affected by this bug, open your Settings. Tap Apps, then swipe to the Running screen. If the System is consuming large amounts of RAM then this is a sign you're being affected by the bug.



2 Make a backup

Before you start, make a full backup just in case you encounter a bootloop. Then, go to bit.ly/1COxK7K and download xposed-arm ZIP and the Xposed Installer. Boot into your device's custom recovery, then flash the xposed-arm ZIP file and reboot.



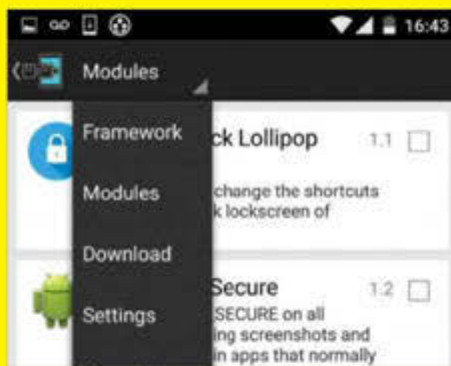
3 Search for module

Use your ES File Explorer app to get to the Xposed Installer file. Tap this file, then follow the instructions to install. Once installed, launch the Xposed Installer app and tap 'Download.' Tap the little magnifying glass icon and perform a search for 'Fix Lollipop Memory Leak'.



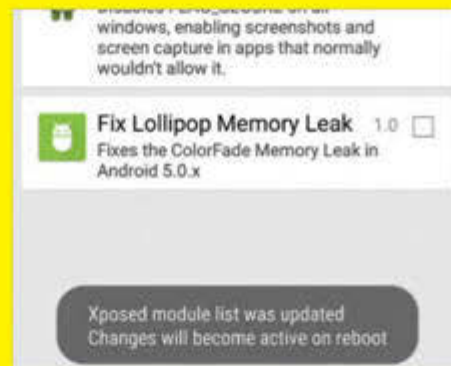
4 Download the module

Tap the 'Fix Lollipop Memory Leak' module, read the information and right swipe to Versions. Tap Download and confirm that you want to install this module. Return to the main Xposed Installer screen. In the toolbar, tap Download>Modules from the dropdown menu.



5 Select Memory Leak module

Select 'Fix Lollipop Memory Leak'. You'll need to reboot before this module activates, so open the toolbar dropdown menu, tap Framework and Soft reboot. Once rebooted, you should notice less crashes and better overall performance.



6 Remove Xposed modules

If at any point you want to deactivate the module, open Xposed Installer and tap Modules to see installed modules. Deselect 'Fix Lollipop Memory Leak'. Then open the dropdown menu, select Framework and tap Soft reboot.

Works with » Any version of Android Difficulty » Advanced

Troubleshoot any app with logcat

Issues with an app? Get a complete log of what's going wrong

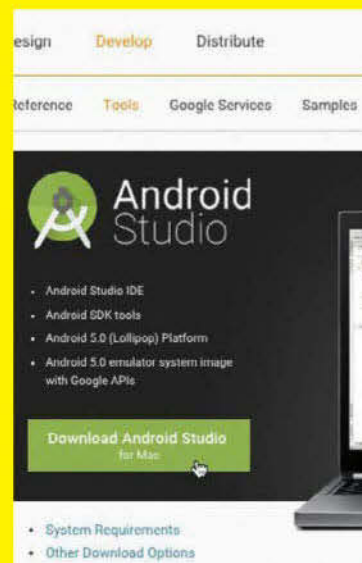
Have you ever encountered a problem with an Android app that you've reported to the developer? If so, then chances are you've been asked to provide a log for that error.

Logcat is a feature that enables you to view the logs generated by applications on your Android device. When you encounter a problem, viewing these logs is often the best way to figure out exactly what is going wrong.

Being able to provide a log is the difference between telling the developer "your app keeps crashing for some reason" and saying "your app keeps crashing and here's the log so you can see exactly what's going wrong". These logs don't just make life easier for the app's creator, they could also mean that you'll get an update that fixes your problem much sooner than you otherwise would.

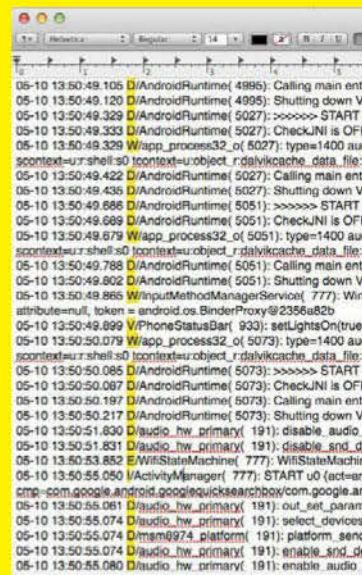
Also, if you have some experience with developing Android apps and the app is open source (basically its code is publicly available), then being able to grab a log may mean that you will be able to solve the problem by yourself!

This tutorial shows you how to use logcat to get the logs for any app running on your Android device. You'll also learn how to easily share these long, text-heavy logs with others using the popular paste-service Pastebin (pastebin.com), before beginning to explore how to decipher Android logs for yourself.



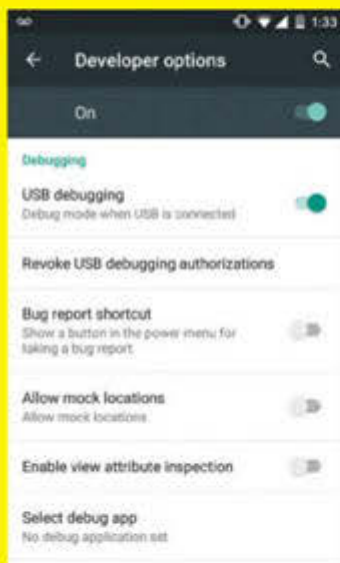
1 Install the Android SDK

The first step is installing the Android SDK. If you plan on developing your own Android apps then you can download the SDK as part of the Android Studio bundle (bit.ly/1nZpZpy) or you can download it stand alone at the following link: bit.ly/1BqfClf if you prefer to do so.



6 Check the priority

To decipher the log yourself, start by looking at the letter at the start of each line. This letter indicates the priority – in other words, it shows how serious the attached issue is. From lowest to highest, these priorities include the following: Verbose (V), Debug (D), Info (I), Warning (W), Error (E) and Fatal (F).



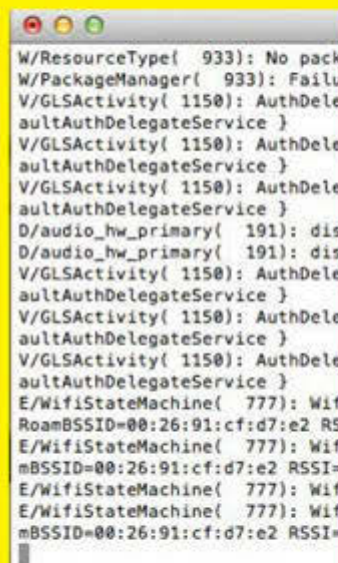
2 Enable USB debugging

Enable USB debugging by going to Settings>Developer options>USB debugging. If you don't see Developer options, unlock this menu by going to Settings>About phone and tapping Build number until you see a popup. Next, attach your device to a computer.



3 Change directory 'cd'

Open your terminal and change directory (cd) so it's pointing at the 'platform-tools' folder created in your Android SDK installation. Your command should look like: `cd /Users/Downloads/bundle-mac-/sdk/platform-tools`. Type this into terminal and press Enter.



4 ./adb logcat

Check the Android Debug Bridge (adb) has detected your device by issuing the `./adb devices` command via terminal. If adb can't communicate with your device, try plugging it into a different USB port. Next, issue the `./adb logcat` command. Everything your device is doing will appear in terminal.



5 Paste into Pastebin

Launch the app you want to test and reproduce the error. Then copy the terminal output and paste into Pastebin. Check you're not pasting personal information such as local network addresses, which can appear in Android logs. You can share this log by sharing its link.



7 Research your tag

After the priority, comes the issue's tag. This is the system component where this message originates. There's loads of tags so you may need Google to find out what a particular tag means. As you can probably tell, the amount of log text can quickly build up!



8 Filter your logs

You can reduce the messages that appear in Terminal, using a tag:priority command. Note, priority indicates the minimum level of priority. So, if you only wanted to see messages tagged 'ActivityManager' with a priority of 'Warning' or above, use: `./adb logcat ActivityManager: I *:S`.



9 Advanced log filtering

The `*:S` part of the command is crucial, as it tells the system to silence all except messages that meet your criteria. You can also string multiple tag:priority together, or filter based on priority only, for example `./adb *:W` returns messages with the Warning priority.



10 Try an app

Alternatively, there are apps that you can install on your Android device that collect logs for you. Two logcat apps that you can download for free from the Google Play store are CatLog and Logcat Extreme, although it is worth noting that if you're running Android 4.1 or higher these apps do require root.

Works with » Android Wear **Difficulty** » Intermediate

Install Gohma on your smartwatch

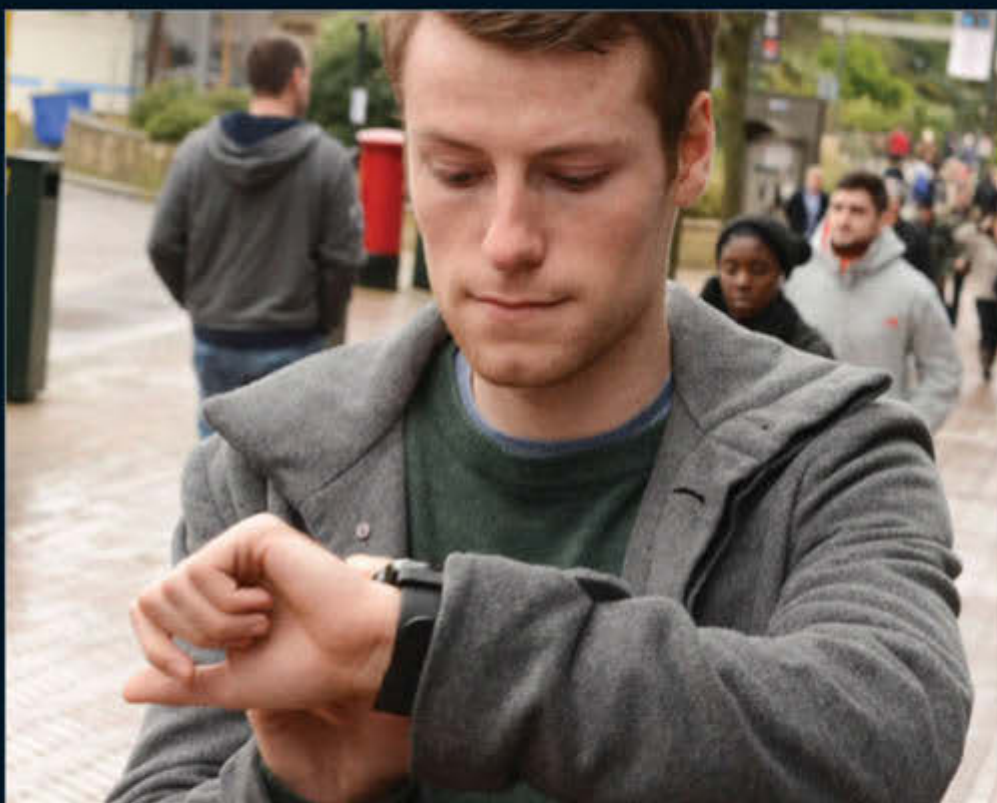
Flash Gohma to increase your control and customisation options over Android Wear, as well as boost your battery life

One of the tricks to Android's success is that the base code for the operating system enables it to run on a wide range of hardware without needing to add any extra drivers. It means manufacturers can take minimal time to actually get their phones and tablets working, making it a lot cheaper for them.

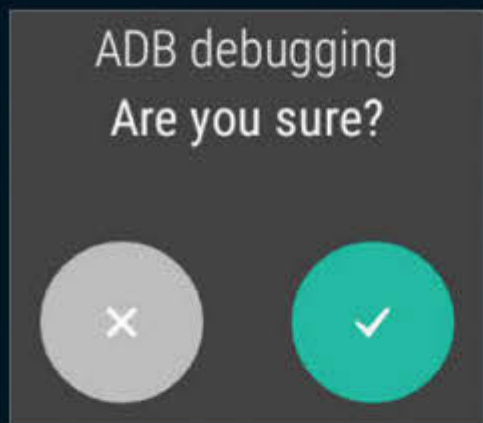
Android Wear is quite similar, enabling companies to very easily get a running watch working and connecting to an Android device. It's especially noticeable with the watches at the moment, because very few modifications to the UI exist between the different brands available.

This broad range of support, while useful for actually getting a working product, means that the code is not always completely optimised for the device it is running on. With new devices, like the G Watch, this can be quite useful to proper hackers who have a look at the code. As the software is free for anyone to use, software engineers and hobbyists have free reign to look over it and make changes.

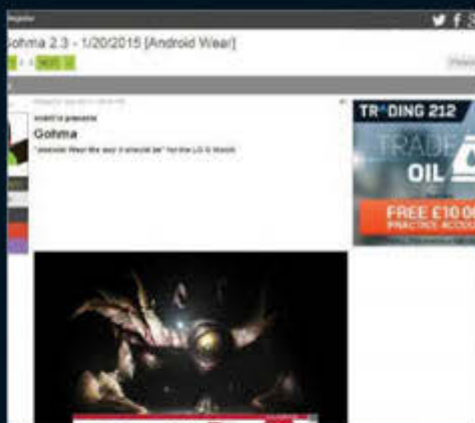
Gohma is the result of this – a custom ROM that we used on the G Watch that gives speed, performance and battery optimisations, plus a few extra tricks.



Customise your smartwatch



1 Prepare the watch
Ensure your rooted watch has USB debugging turned on. Find this in the development options unlocked by pressing Build seven times in the About menu pulled down from the top.



2 Get the software
Visit bit.ly/1zBgYTL to download the Gohma files. Otherwise, you can Google it, but make sure you add 'g watch' to the search or you'll end up reading about videogame spiders.

Date modified	Type	Size
02/10/2014 07:08	File Folder	
20/01/2015 21:33	File Folder	
15/02/2014 08:30	File Folder	
16/11/2012 22:37	Application	932 KB
16/11/2012 22:37	Application	795 KB
01/09/2014 17:00	LD/ELF File	1,202 KB
13/05/2013 13:03	OSX File	1,227 KB
16/11/2012 22:37	Application system...	96 KB
16/11/2012 22:37	Application system...	60 KB
16/11/2012 22:37	Application	154 KB
01/09/2014 17:00	LD/ELF File	104 KB
13/05/2013 13:03	OSX File	185 KB
11/11/2014 08:40	SH File	2 KB
17/02/2014 08:40	SH File	1 KB
17/02/2014 08:40	SH File	2 KB
17/02/2014 08:40	SH File	1 KB
11/07/2014 22:06	Disk Image File	6,242 KB
03/03/2015 10:46	Text Document	4 KB
17/11/2014 08:40	Windows Batch File	2 KB

3 Connect to a computer
Unzip the files and connect your smartwatch to your computer via the USB cable. If this is the first time you've done so since rooting, you may need to accept the debugging prompt.

What you should notice when the custom ROM has been installed

Improved performance

Swiping between notifications is now quicker and easier, with less lag and more responsive touch. Items will load faster and there are a few more options as well

Vibrate more

Have you felt that the standard vibration of your smart watch is weak? Gohma makes the vibrations more powerful while still keeping the improved battery performance

faq

Ask your own question online at littlegreenrobot.co.uk

Other custom ROMs

As well as Gohma for the G Watch, you can also grab custom ROMs for other watches. This includes software such as the Tizen mod for the Galaxy Gear and other upcoming ROMs for optimising and customising your watch. It's one of the perks of owning an Android device, and these custom ROMs will only get better and more feature-full as time goes on.

Better battery life

Having to recharge your watch every night is one thing, but doing so while on the go is a complete inconvenience. A better battery really reduces this

[illegible]

4 Install the ROM

4 Double-click on the windows 'installer.bat' to get the installation started. All you'll need to do is press any key for it to do its thing. Leave it alone and do not unplug your phone from the PC.

406KPBF0160389

Build number

Gohma 2.3

Connection

Connected

Battery

97%

5 Finish and reboot

5 The watch will reconnect to your phone and act as if little has changed. Check by going back to the About settings in the menu. You should see Gohma under the Build number.

6 Use your watch

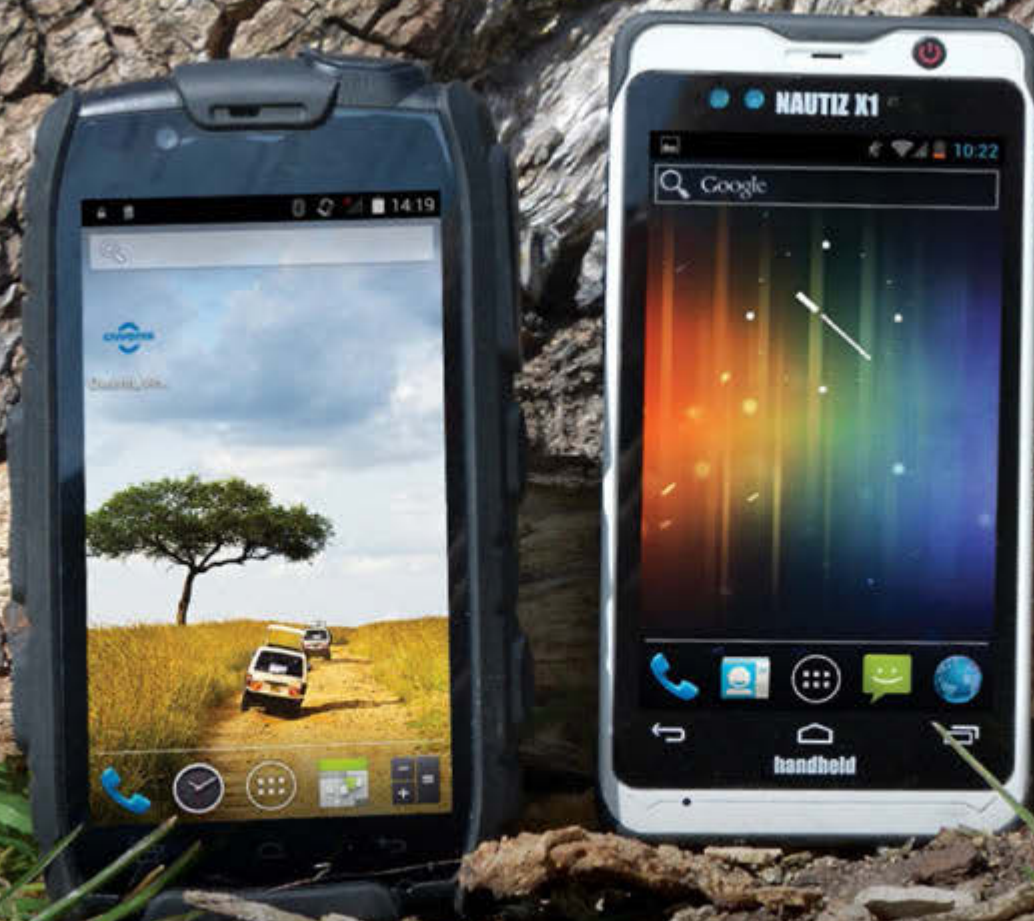
Now you have your custom ROM installed, the watch should have all the extra benefits of Gohma without having to install or set up anything else, so go ahead and enjoy the changes.

All-terrain

**Do you need a device that can take a beating and battle the elements?
We put the toughest smartphones and tablets to the test**

The summer season comes with huge risks for phones. Outdoor events, hiking in the wilderness and sunbathing on the beach are all fraught with danger for fragile flagship handsets that you pay a fortune for, but can crack if dropped or seize up at the first contact with water or sand. Thankfully, there are plenty of Android rugged devices capable of dealing with whatever the elements throw at them. Rock-solid cases and water and dust-proof flaps are key to creating a hardy phone that can survive anything that the great outdoors throws at it.

We've pitted four of the toughest handsets on the market against each other to see which one would be the best for standing up to nature but still functions well as a day-to-day mobile. The tested four are the Nautiz X1, RugGear RG900, Defender Toughphone and the Cat S50, all of which have been designed with strength and resilience in mind. These devices are unlikely to stand up to flagship models from the established smartphone powerhouses in terms of specs, but will almost certainly outlast them if you're planning to do anything active.



Group test

Android



Cat S50 information

Price **£359**

» More information www.catphones.com

» Supplied by **CAT**

technical specs

» Operating system.....	Android 4.4 KitKat
» Processor.....	Qualcomm Snapdragon 400 1.2Ghz quad-core
» Memory.....	8GB Storage/ 2GB RAM
» Dimensions.....	144.5 x 77 x 12.7mm
» Weight.....	185g
» Display size.....	4.7-inch
» Display resolution.....	1280 x 720
» Connectivity.....	4G, 3G, Bluetooth 4.0, Wi-Fi
» Camera.....	8MP rear

» head-to-head

Ruggedness

This phone doesn't feel quite as unbreakable as the others in this test, despite feeling an awful lot less fragile than most devices. It will survive drops and spills but might not be totally indestructible

Looks

This phone feels much more like a bona fide smartphone than the others. It is well designed, well finished and is the thinnest of the group. It wouldn't look out of place in everyday usage at all

Features

There isn't a lot to shout about here, although the addition of the Cat apps is a good plug for the company's services. They are quite useful additions as well, so you don't feel like it's bloatware

Camera

Both cameras are very solid pieces of kit. They are enjoyable to use and produce high quality images. Again, not quite at the level of the best phones but certainly upper mid-range at least

» Verdict

This phone is hard to fault. It looks pretty good, the processor handles tasks easily and it has the best quality screen of the bunch



Video capture

If you can find some way to secure it, this phone could make a GoPro alternative. It shoots 1920x1080 video at 30fps, which is more than enough to create awesome action videos

Expandable storage

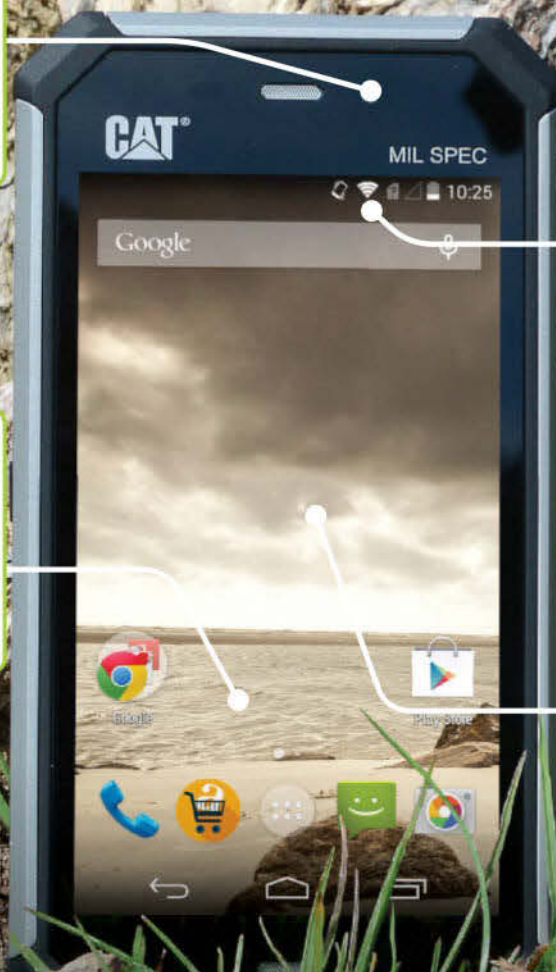
Although the in-built storage is fairly limited in the S50 to 8GB, it does have an SD card slot. This enables you to ramp up the storage space to 64GB, which should suit the majority of users

Much more signal

One of this phone's main selling points is that it is capable of receiving 4G signal. This would be really ideal for outdoors scenarios where you might be lacking in sufficient 3G signal

Screen protection

As you would expect from a phone that classes itself as rugged, the S50 uses Gorilla Glass 3 to protect its 4.7-inch, 1280x720 screen. It's not fully scratch resistant, however



Cat S50

The fast-paced 4G connected phone for the data-hungry adventurer

Cat is better known for building heavy-duty trucks and diggers, but the company has also branched out into heavy-duty phones, the latest of which is the S50. It runs Android KitKat 4.4 and has a 1.2GHz quad-core processor under the hood, which is enough to power it quickly and effectively. Web pages load quickly and games play without a hiccup, so in terms of performance it really is hard to find fault with this handset. It also has 4G connectivity, which is a useful and excellent addition for an outdoors phone that may be far away from conventional phone or 3G signal.

It isn't too bad looks-wise either. Aside from the outer casing, you could be forgiven for thinking this is a mid-range Sony with its 4.7-inch display and sharp corners. The protective casing is metal along the sides and rubber in the corners and, although it doesn't feel quite as solid and firm as the others, it feels much more durable than your average phone. It is also fairly thin at just 12.7mm and weighs 185g,

so only marginally more than most other Android devices of a similar size. One of the great advantages the S50 has over the majority of phones that claim to be waterproof or water-resistant is that it contains wet-finger tracking technology that means you can continue to operate the phone even if the screen and your finger are wet. The screen itself is nice and sharp, with a high ppi count so you could be fooled into thinking this is a pretty premium device. It has a handful of Cat apps, including a Cat app store that has loads of apps not found on the Google Play store. These are mostly health apps and tools, which are perfect for the S50's target audience. Both the front and rear cameras are fast and responsive, quick to focus and take excellent quality images, so you can't even fault this phone in that category. It comfortably survived our drop test, though the screen is scratchable. However, a simple protective cover should be more than adequate for armouring that adequately.

High safety rating

The Defender's IP rating of 68 means that it has attained the very highest levels of protection against both water and dust. As long as the flaps are tightly shut, absolutely nothing should work its way into the hardware

Screen

The Defender's screen is made by DragonTail, which is one of the few competitors for Corning's Gorilla Glass. It is notable for its thinness, resistance to scratches and the smooth finish

Walkie talkie

The Defender doubles as a walkie-talkie. You can add on an external aerial to the phone to turn it into a medium-range walkie-talkie that doesn't eat up minutes or data

Storage

The Defender's 4GB of internal storage can be beefed up to 64GB with the addition of an SD card. Nearly half of that internal storage is lost to pre-loaded apps so the SD card is recommended

Defender Dual SIM

The dual-SIM phone that could double your network coverage easily

From Toughphone, comes the Defender Dual SIM – the name tells you all you need to know about this handset. This is clearly a phone designed to be to smartphones as the Nokia 3210 was to non-smartphones. It is an incredibly solid and rugged device that you could probably bang nails in with if you wanted. The rubberised casing is absolutely rock solid and just comes up over the lip of the screen, so unless the Defender falls on something protruding, you can be pretty confident that it will remain intact.

However, with this great strength comes a cost. In terms of looks, this is much closer to a walkie-talkie than a mobile phone. It's very boxy being over three times the thickness of the Samsung Galaxy S6, and the design leaves an awful lot to be desired. There are a lot of chunky buttons and protrusions that makes this phone even less attractive.

Once you delve underneath the shell, however, this is a pretty good quality model. It runs Android 4.4 KitKat on a 1.3GHz quad-core MTK6582 processor. The

2,600mAh battery gives you ten hours of talk time, which is rather generous, and the 4-inch screen packs in 245ppi which makes for a very pleasant user experience. The 3GB of internal storage can be boosted to 32GB with the addition of an SD card, which is something we would strongly recommend. The rear camera is also a positive note. It takes 8MP snaps and has an LED flash to back it up in low light conditions, although we wish the same could be said for the front-facing camera, which is only 0.3MP and doesn't deal so well in dark conditions. The device comes packed with all the expected Android apps, though it does have one excellent prize feature. The Defender comes with a detachable aerial that can be screwed in and will transform your phone into a walkie-talkie. This is a very useful function for outdoors use and does make the Defender worthy of consideration if you are out and about in tough terrain a lot. The dual-SIM function would be useful for extending network coverage as well.

Group test

Defender Dual SIM information

Price **£349**

» More information clove.co.uk

» Supplied by **Clove**

technical specs

- » Operating system.....**Android 4.4 KitKat**
- » Processor.....**MediaTek MTK6582 1.3GHz quad-core**
- » Memory.....**3GB storage/ 1GB RAM**
- » Dimensions.....**131 x 70.8 x 22mm**
- » Weight.....**235g**
- » Display size.....**4-inch**
- » Display resolution.....**854 x 480**
- » Connectivity.....**3G, Bluetooth 3.0, Wi-Fi**
- » Camera.....**8MP rear, 0.3MP front**

» head-to-head

Ruggedness

This is a superbly strong device. Encased in that thick rubber mould, you are not going to break it at all. Plus, the IP68 rating makes it an absolute powerhouse for anyone who is in a hostile or changeable environment

Looks

This isn't an attractive handset at all. The bulky, rubbery shell may be effective but it certainly isn't good looking and it doesn't fit snugly in the pocket. The screen is very small as well and the bezels are huge

Features

The main feature of the Defender is the dual-SIM capability. It is ideal for those who are out and about and may lose signal coverage from one carrier but could pick it up with another.

Camera

8MP is very generous on the rear-facing camera and the stock Android camera app does the job in a familiar way. The front-facing camera, however, is pretty terrible. It's blurry and awful in low-light conditions

» Verdict

The Defender has good, if slightly limited specs. The rubber casing is a powerful addition but doesn't make it a desirable phone to use in an everyday situation



Nautiz X1 information

Price **£509**

» More information handheldgroup.com

» Supplied by **Handheld UK**

technical specs

» Operating system	Android 4.0 Ice-Cream Sandwich
» Processor	Texas Instruments OMAP 4430 1GHz dual-core
» Memory	4GB storage/ 1GB RAM
» Dimensions	125 x 65 x 15mm
» Weight	180g
» Display size	4-inch
» Display resolution	800 x 480
» Connectivity	3G, Wi-Fi
» Camera	5MP

» head-to-head

Ruggedness

The X1 deals very well with the drop test but loses a lot of functionality when wet. The touchscreen becomes less responsive when wet and, although it returns to full working order once dried off, this is definitely an issue

Looks

It does look like the kind of handset you could use on a daily basis. However, the placement of the power button and white plastic casing makes it look a bit like a toy phone or, at best, a budget handset

Features

This is very limited in terms of features, especially falling short by not having the Google Play store pre-loaded and making it difficult to download anything. Otherwise it's running fairly stock Android apps

Camera

The X1 only has a rear-facing camera, disappointingly, and it takes pretty good images for a 5MP device. It does take quite a while to focus, however, and it is extremely limited in terms of filters and editing options

» Verdict

A limited smartphone and on the slow side due to a limited processor, but a powerfully built device that wouldn't look massively out of place in an everyday situation



Low weight

At 180g, this model is only 20-30g heavier than most smartphones. Even though the handset is slightly smaller than most, for a phone with all its added safety features, this really is a truly remarkable achievement

Button placement

The power buttons are on the left hand side and the right sports two buttons too, one to answer a call, the other to hang up. Therefore it seems strange to put the power button on the front

Screen quality

At just 233ppi, this phone's pixel density is comparable to really budget phones. The screen is fairly clear, but if you're used to bright, sharp screens you'll notice the difference straight away. It does successfully do the job, however

Waterproofing

No matter what environment you take it to, the X1 should survive with ease. It's passed military standard tests in surviving drops, extreme temperatures and humidity, as well as having an IP67 rating against water, dust and sand

Nautiz X1

The strong phone that you can take absolutely anywhere

Nautiz is the range of mobile devices from Handheld, a company that specialises in creating tough technology to survive in outdoors environments. The X1 is the smartest smartphone in their range, being the only one available to sport a touchscreen. Handheld claims that the X1 has a slim design and to an extent that is true, but we must add a caveat here. At 15mm thick, the X1 is twice the thickness of the very top of the range phones but is thinner than many of its tough phone rivals and doesn't come with all that added bulk that some of its rugged competitors do. The protection is built into the handset with the use of sturdy materials, as opposed to a thick plastic casing. This results in a comfortable phone to hold that actually feels like a phone, if perhaps one from a good few years ago.

Inside the X1, which runs Android 4.0 Ice Cream Sandwich, is a 1GHz dual-core processor that does feel sluggish on occasion. Having multiple windows or apps open noticeably slows it down and games

are a little bit jumpy, although if you are out and about you probably won't be playing games. The 4GB of storage is acceptable for a phone of this kind and it is expandable, which is real a bonus. One major frustration is that it doesn't come pre-loaded with Google Play store and any attempt to download it was thwarted. The Handheld Market, essentially the replacement for the Google Play store, refused to load any options but did eventually let us download a game by using the search function. The power button is at the top on the front, which is fairly unique among phones and sits a little strangely, especially as there are other buttons along the sides. The touchscreen on the X1 can be a little slow to respond and is definitely not smudge resistant, although the plastic back does remain nice and clean. This would almost certainly be quite a frustrating and limited device for everyday use, but the strong build and basic functionality would be more than sufficient for occasional outdoor use.

Group test

RugGear RG900 information

Price **£538**

» More information clove.co.uk

» Supplied by **Clove**

technical specs

- » Operating system.....**Android 4.1.2 Jelly Bean**
- » Processor.....**Qualcomm Snapdragon 200 1.2GHz quad-core**
- » Memory.....**16GB storage/ 1GB RAM**
- » Dimensions.....**213 x 140.9 x 20mm**
- » Weight.....**650g**
- » Display size.....**7-inch**
- » Display resolution.....**1280 x 800**
- » Connectivity.....**3G, Wi-Fi, NFC**
- » Camera.....**8MP rear/ 2MP front**

» head-to-head

Ruggedness

This is a beast of a device that will stand up to a lot of abuse. This does make it quite heavy for a 7-inch tablet but not prohibitively so. The strap also helps to make it more secure

Looks

It's certainly not a premium looking device, but the design is attractive in an outdoorsy kind of way. It's been well designed, the cameras are well positioned and the strap even doubles as a mini stand

Features

The RG900 comes with the stock Android apps that you need but has a pre-loaded Dolphin Browser. The pre-installed Camcorder app is a nice and the apps only take up a quarter of the available storage

Camera

The two cameras on this tablet are among the highlights of the RG900. The rear camera takes sharp, focussed photos and the front-facing 2MP camera takes good selfies, if slightly lacking in sharpness

» Verdict

This tough tablet has a speedy Snapdragon processor, a mid-range quality screen and will survive in all temperatures and even a drop in the water



Battery life

The RG900 packs a 7,000mAh battery which is among the larger batteries you'll see on the market. It should give you a good couple of days of medium use, which seems pretty reasonable to us

All-weather tablet

The RG900 has an impressive temperature range, being able to operate in temperatures as low as -20°C and as high as 60°C. That's more than most of us will experience but it's good to know it won't suffer

Pixel density

Despite a pixel density of only 215ppi, the screen actually looks fairly impressive. You can notice the low pixel count when viewing videos, however, but in general it is vibrant and attractive to look at

Older OS

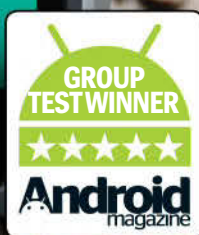
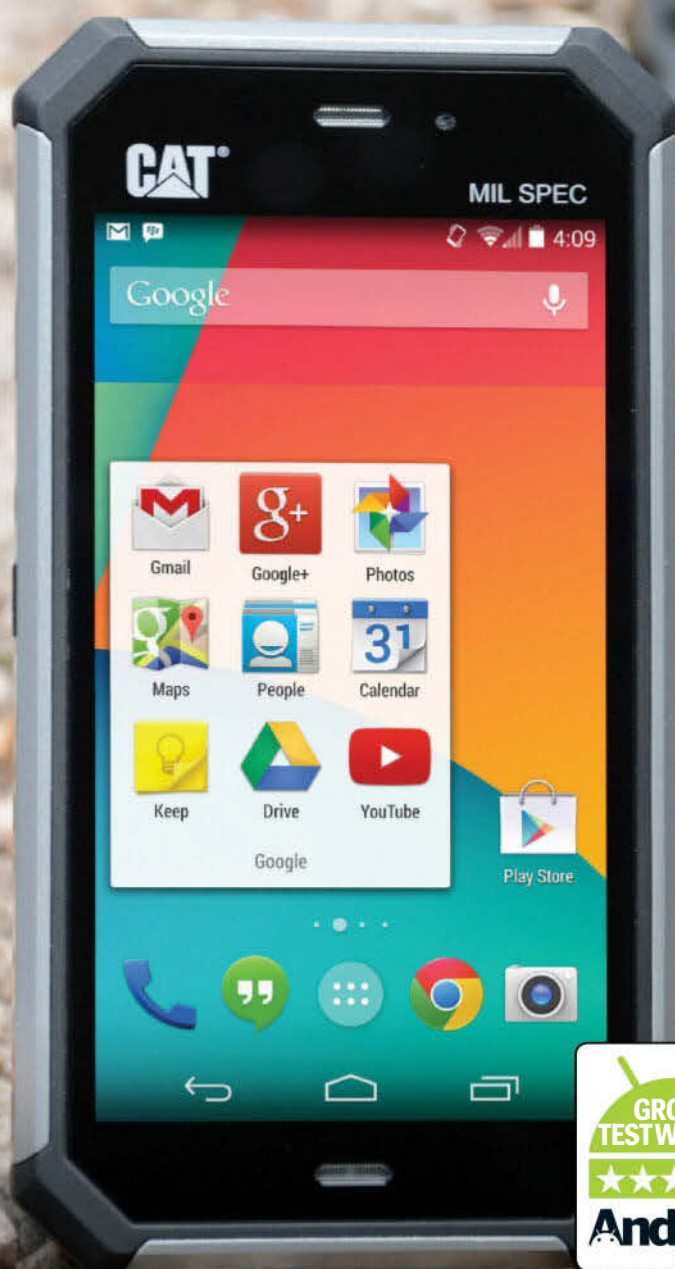
The RG900 runs Android 4.1.2 Jellybean, so it's a couple of operating systems behind, but it does provide all the basic functions you need. It does miss the latest Maps update though, which would be useful

RugGear RG900

The tablet that will just keep on going and going as long as you need it

If you think that getting a new phone just to deal with the perils of the outdoors is a little unnecessary, a strong tablet may be the answer as it could easily double as a home tablet, whereas a second phone may be surplus to requirements for most of the year when the weather leaves a lot to be desired. The RugGear RG900 is a fairly weighty tablet but it does come with a number of features that makes it ideal for the all-action, all-weather nature of summer events, as well as being practical in the home. It's one of the first tablets to earn an IP67 rating, making it resistant to water and dust, and it has been tested to military standards. It feels really firm and solid in the hand and it would take an awful lot of effort to damage it. It's encased in an extremely firm rubber, reinforced with plastic for extra rigidity, and has a hand strap on the back to make holding it much easier. This is an excellent touch because tablets can often be tricky to hold for long periods of time and if

you're recording an act, taking lots of pictures or just generally carrying it around, this strap makes a lot of difference. The rear facing camera is a sharp 8MP affair, taking clear photos and dealing reasonably well even in low light conditions. This is even more impressive considering that tablets often fall well short in the camera stakes. Even the front-facing camera, which boasts 2MP is pretty good, picking out detail from several metres away and so making this ideal for group selfies. The menu layout is rather strange with multiple dropdown menus and you lose a lot of screen with the controls but overall this is a very good piece of kit. The 1.2GHz quad-core processor deals well with most tasks thrown at it and was comfortable at playing videos and games even with other apps running in the background. It still only runs Android 4.1.2 Jellybean and is as close to vanilla Android as you're likely to get, but that doesn't really hamper the basic experience at all.



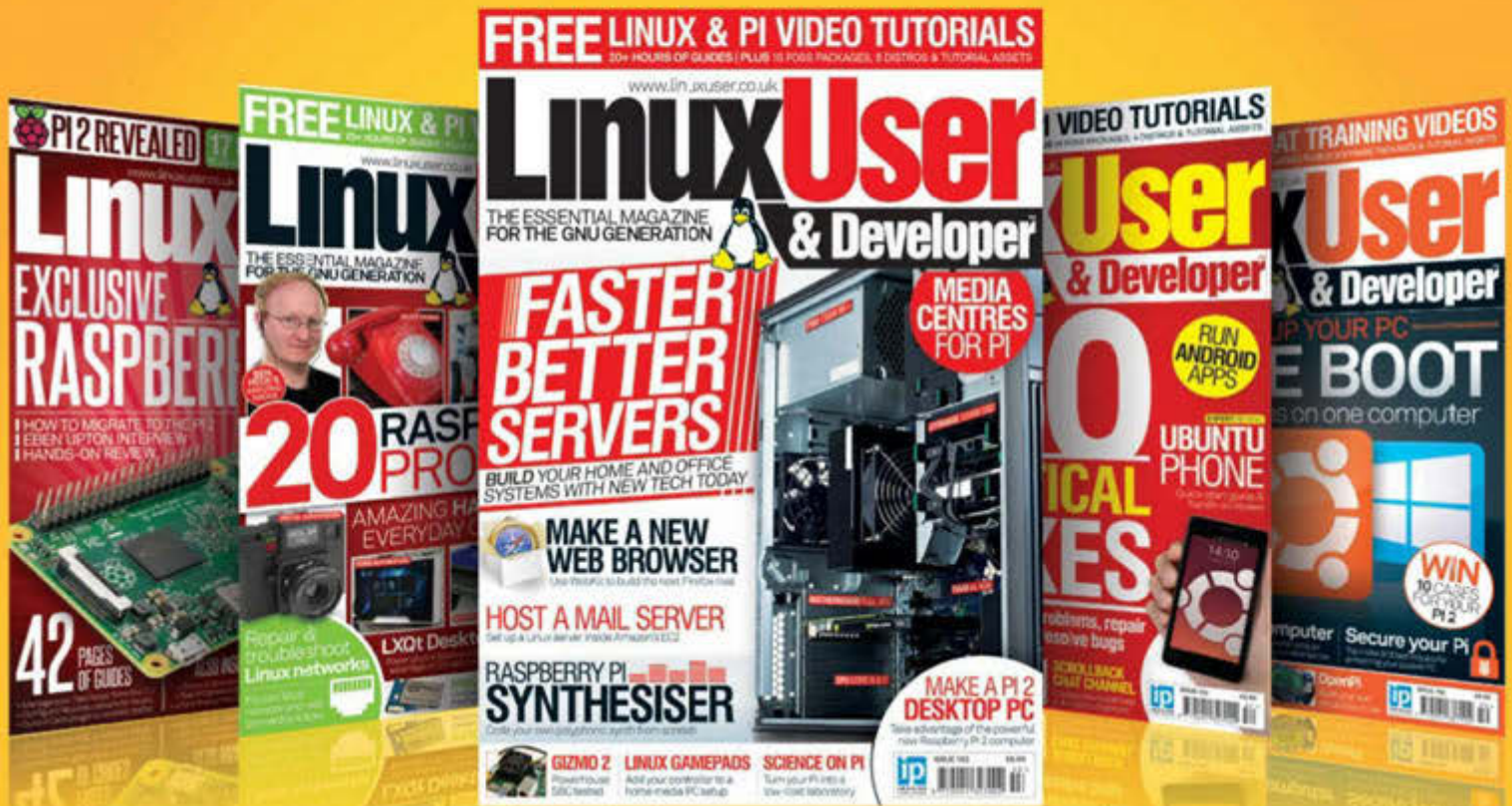
The Winner...

The clear winner in this test has to be the Cat S50. It outperforms its rivals in nearly every scenario. It has by far the best screen, the best specs, the best performance and looks the nicest as well. If there is anywhere it falls a little short, it's in actual destructibility. You do feel that it could be broken if enough force was applied to it, but it still stands head and shoulders above all mainstream phones in terms of strength. Cat really has created an excellent product that we would recommend you seriously consider if you live an active lifestyle and find that your phone is prone to getting damaged. The RugGear RG900 comes behind it in second place, thanks to its good quality screen, long battery life and general durability. The added armour doesn't weigh it down too much and it is easy to imagine using it both at home and outdoors as its performance stats are fairly high. It is followed by the Defender. It's the least attractive of all the devices but it performed well in tests and that rear-facing camera is good quality. Strong, durable and quite nippy, it's worth considering if you can deal with the looks. Finally, we have the Nautiz X1. It is a neat little device, fairly compact and clearly a powerful handset with that thick, solid coating. However, it is let down slightly by its performance, which is prone to lagging and slowing down and we wish it had performed better in the wet.

	CAT S50	RugGear RG900	Nautiz X1	Defender Dual SIM
OS	Android 4.4 KitKat	Android 4.1.2 Jelly Bean	Android 4.0 Ice-Cream Sandwich	Android 4.4 KitKat
Processor	Qualcomm Snapdragon 400 1.2GHz quad-core	Qualcomm Snapdragon 200 1.2GHz quad-core	Texas Instruments OMAP 4430 1GHz dual-core	MediaTek MTK6582 1.3GHz quad-core
Memory	8GB storage/ 2GB RAM	16GB storage/ 1GB RAM	4GB storage/ 1GB RAM	3GB storage/ 161GB RAM
Dimensions	144.5 x 77 x 12.7mm	213 x 140.9 x 20mm	125 x 65 x 15mm	131 x 70.8 x 22mm
Weight	185g	650g	180g	235g
Display Size	4.7-inch	7-inch	4-inch	4-inch
Display Resolution	1280 x 720	1280 x 800	800 x 480	854 x 480
Connectivity	4G, 3G, Bluetooth 4.0, Wi-Fi	3G, Wi-Fi, NFC	3G, Wi-Fi	3G, Bluetooth 3.0, Wi-Fi
Camera	8MP rear, VGA front	8MP rear, 2MP front	5MP with flash	8MP rear, 0.3MP front
Overall score	★★★★★	★★★★★	★★★★★	★★★★★

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Reviews

LG G4

Could this be the phone of 2015?

With only a few exceptions, this year has seen some very middle-of-the-road phone launches. The Samsung Galaxy S6 was quite a dramatic departure from previous models, but it was still doing its best to imitate Apple. The HTC One M9 is almost indistinguishable from the One (M8), except it comes in more colour options and has dropped the awkward parentheses in its title. Meanwhile the Xperia Z4 was so much like the Z3, Sony changed its name to the Z3+ outside of Japan. Even some of the more 'out-there' Androids, like the curvy LG Flex 2 and dual-screen YotaPhone 2, were only minor upgrades on their predecessors and didn't offer any real innovation. Into this monochrome world of mediocrity, enters the LG G4 like a technicolour tornado. With a distinctive leather case, colour-rich Quantum IPS screen, 16MP shooter and a 2TB microSD slot, LG is right to call its new flagship 'the most ambitious phone of the year.' But is that a good enough reason to buy it?

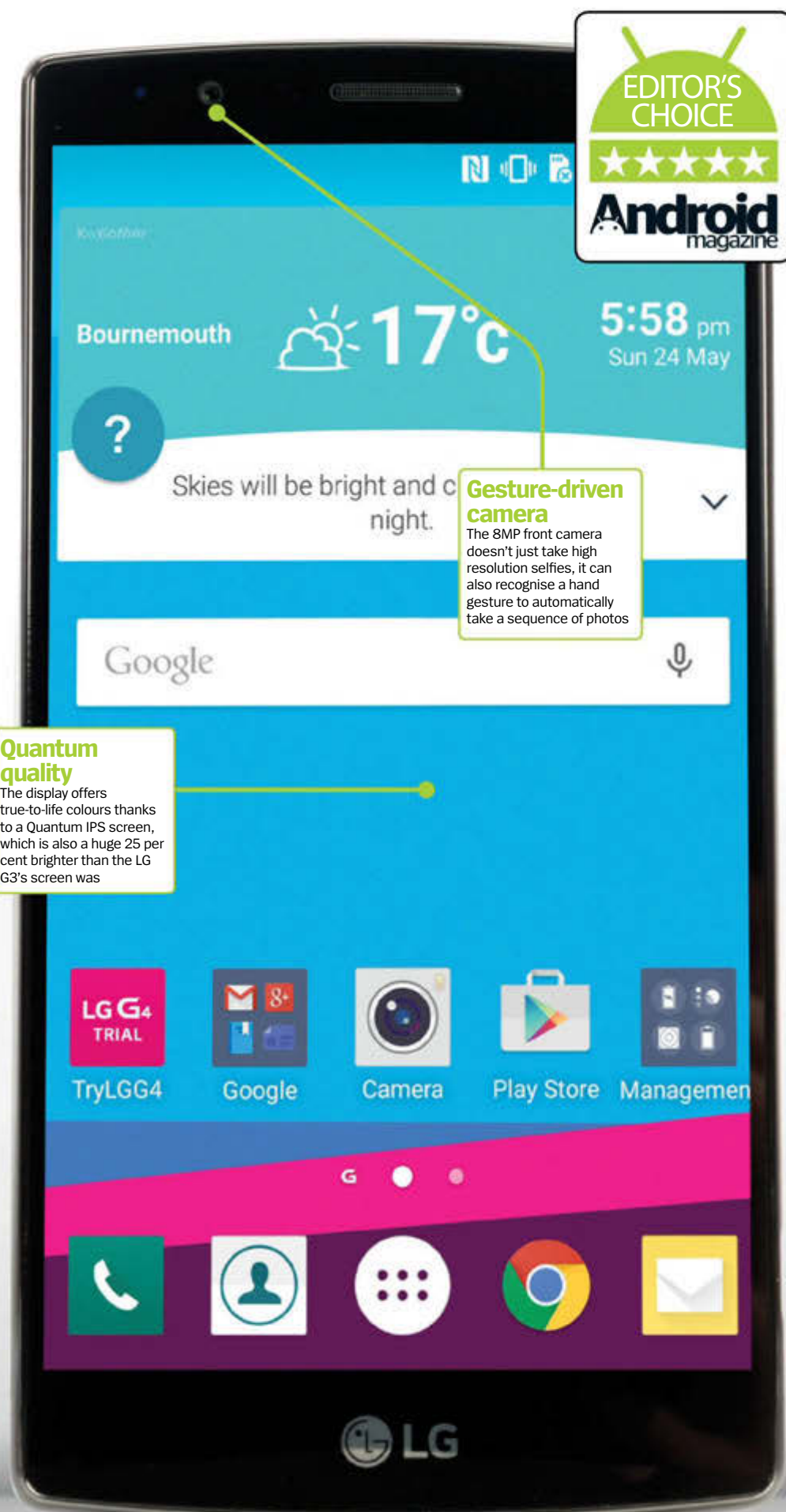
Heaven for leather

The first thing you notice about the G4 is its unique leather-clad back. We were big fans when the Moto X experimented with different types of backplates, including bamboo and leather, and we applaud LG for doing the same. The leather feels warm and comfortable to hold and quite distinct from your everyday plastic phone. This reviewer much preferred it to the leather used for the LG Watch Urbane (see page 74), which felt cheap in comparison. However, the downside is that it is more prone to scuffs and scrapes.

If you're not a fan of cowhide, the G4 is also available with a plastic back. These come in three colours (metallic grey, ceramic white and gold) and are textured with a crisscross pattern that judging from the promo images, we had expected to be more pronounced and tactile. Instead it's actually surprisingly subtle, only visible when it catches the light. This is fine, but it does make the G4 that bit harder to distinguish from its predecessor, the all-plastic G3.

The G4 is also gently curved from 6.3 to 9.8mm. This is not as radical as the banana-shaped LG G Flex 2, but it arcs just enough so that it feels more comfortable in your hand, held against your face and resting in your pocket.

This being an LG phone, the home button and volume keys are also built into the back of the case, nestled under the camera. For first-time LG users this can seem quite odd, but they are actually conveniently placed for when you're holding



Gesture-driven camera

The 8MP front camera doesn't just take high resolution selfies, it can also recognise a hand gesture to automatically take a sequence of photos

Quantum quality

The display offers true-to-life colours thanks to a Quantum IPS screen, which is also a huge 25 per cent brighter than the LG G3's screen was

the phone, so it soon becomes second nature. Given how forward-thinking LG have been with the rest of this handset, we have to admit that we were slightly disappointed that the home key didn't contain a finger scanner though.

Despite the lack of buttons on the front of the phone, LG have left a surprisingly large, centimetre-thick bezel at the bottom of the screen seemingly just to show off the company logo. However, the rest of the screen offers a near edge-to-edge display, so we'll let the shameless self-promotion slide for now.

Cinema-quality screen

The 5.5-inch display is eye-wateringly crisp and colourful thanks to LG's new Quantum IPS screen. What do they mean by 'Quantum' you ask? Well, in addition to being Quad HD in resolution – offering 2,560 x 1,440 pixels, which works out at 538ppi – the screen is 25 per cent brighter with a 50 per cent higher contrast ratio, and has a wider colour gamut than the earlier LG G3's QHD LCD display. In an attempt to match the standards used by Hollywood movie studios, dubbed DCI or Digital Cinema Initiatives, the G4's display offers deeper saturation in the reds and blues. LG say the G4 offers 98 per cent of the DCI colour gamut, taking a slight hit for a loss of green saturation. This might all sound like technical jargon, but red is the colour that the human eye can see the most variation in, so by displaying a wider range the screen can re-create a rich overall image.

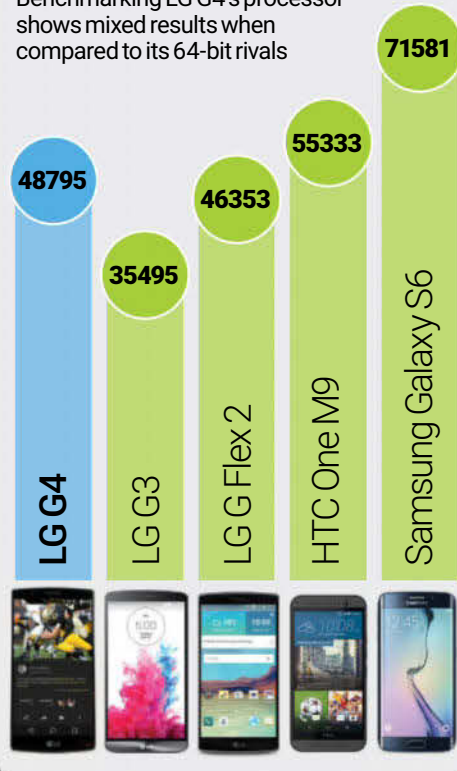
Our hands-on experience of the display is that it was near flawless. Images were sharp, showing up minute details, and the colours felt rich and true to life. The screen was not only large enough to comfortably watch videos, but it also has wide viewing angles so we never struggled to see what was on screen. When compared to the Galaxy S6, brightness seemed about equal, however, we found the G4 had the advantage in direct sunlight.

Processing power

Under the hood, the G4 is packing a Qualcomm's 64-bit hexa-core Snapdragon 808 processor clocked at 1.8GHz. If you're the sort of person that knows their chipsets, this might give you pause for thought. The HTC One M9 and LG G Flex 2 both use the Snapdragon 810 instead, which was billed as the pinnacle of the firm's chip design when it was announced last year. However, the 810 has experienced a few PR set backs having been linked to overheating handsets. So is this why LG have opted for Qualcomm's other current-gen chipset? Both Qualcomm and LG say no and that the 808 has been planned to be used in the G4 for over a year. What is the difference between the 810 and 808 then? The benchmarks paint a confused picture. When compared using the AnTuTu 64-bit benchmark, the G4 scored 48795, while the HTC One M9 scored a superior 55333, but the G Flex 2 scored just 46353. This reflects the marginal benefit you will see in real-terms. The Snapdragon 810 offers →

Snapdragon 808 supertest

Benchmarking LG G4's processor shows mixed results when compared to its 64-bit rivals



Dual-screen mode

Make the most of the 5.5-inch display and read your emails and look up addresses on Google Maps at the same time with the G4's dual-screen mode

Get the leather look

If you like leather, the LG G4's bold design choice looks and feels really premium, and sets it apart from both the competition and every other LG model

Reviews

slightly better gameplay and ultra-HD video playback because of its beefed up Adreno 430 GPU, but not enough that you'll really notice the difference. What you will notice is your battery going down a lot faster as the 810 requires a lot of juice compared to the 808.

The rest of the G4's specs are quite similar to that of the G3. This is not what we would hope to get from the 'most ambitious phone of the year,' but 32GB storage and 3GB RAM are still ample and in line with its competitors. What is more interesting is that while Samsung jettisoned many of its internals to squeeze into its slimmed-down metal chassis, the G4 has embraced them with gusto. The 3,000 mAh battery is replaceable, so you can easily swap it out for a fully charged one, but it also supports Qi wireless charging. The only downside is that this requires fitting a different back plate to the phone which has yet to be released. If you have concerns about the 32GB memory, the G4 has also kept the microSD slot which supports an incredible 2 terabytes of extra storage. Android fans that have been alienated by the Galaxy S6's iPhone-ification should take note. Alternatively, the device also comes with 100GB of Google Drive cloud storage for two years.

Creative camera

However, the hardware upgrade LG have been championing as the tentpole feature of the G4 is its rear camera – and with good reason. Packing 16MP and with a f/1.8 aperture, it produces some of the best photos we've ever seen taken on a smartphone. In daylight, we found pictures were crisp and well-exposed, while at night and in other low light settings, images remained very sharp with little noise. A new colour spectrum sensor that can distinguish between natural and artificial light and adjust the white balance accordingly also helps improve low light shots. However, we did find that the sensors sometimes seemed to be compensating for

lighting issues that weren't there, adding a slightly yellow cast to pictures.

The G4's camera app also offers three user modes — Simple, Basic and Manual — to meet the needs of all types of photographers, from amateurs to expert shutterbugs. Simple mode



The G4's camera lense has an extra wide aperture

does all the hard work automatically, with the laser auto-focus that was so popular on the G3 returning to ensure photos look sharp even when you shoot from the hip.

However, it was the Manual mode that impressed us the most. Packed with a suite of modules and options, we had total control over setting the focus, the white balance, shutter speed and more. For a photographer that knows what they are doing, this will give them the full creative control to produce some truly spectacular photos. Something that will further impress pro photographers is that the G4 can even shoot and save RAW pictures.

The front camera has been updated with an 8MP lens for superior selfies. It also includes a 'gesture interval shot' mode that captures a

sequence of shots two seconds apart by opening and closing your hand into a fist in front the camera a couple of times, which we didn't really see the point of.

Intelligent interface

As you might expect, the G4 runs Android 5.1 Lollipop out of the box so boasts all the operating system's latest features. However, LG always like to put their on spin own things, so the G4 has a colourful interface and a few extra features. Taking its inspiration from Material Design and running with it, LG's UX 4.0 skin has embraced neon bright colours, including fuchsia and electric blue. Fortunately, these are mostly accent colours with most menu screens plain white, though even this can be quite dazzling due to the display's brightness. But, the Smart Notice widget which dominates the homescreen, changes colour to match your chosen wallpaper, giving you some level of customisation control over UX 4.0's look.

The overall user experience of UX 4.0 is smoother than the UX 3.0 on the LG G3 and G Flex 2, with a simplified design and the redundant configuration steps removed. For example, you can simply drag and drop appointments from social networks straight into the calendar which saves you the time of manually having to type them out. The gallery also automatically sorts photos into albums based on the time and location that they were taken which is a bonus.

LG have also put a greater emphasis on the G4 personalising itself to the user by analysing your habits. One example of this is that the G4 will learn your favourite contacts and assign them personalised ringtones. However, for the most part it means that a greater emphasis is placed on the Smart Note and Smart Bulletin features that were a mixed blessing on the LG G3.

The Smart Notice widget sits comfortably on the homescreen delivering personalised notifications that are relevant to you. For instance,



Wireless charging

The LG G4's removable battery can also be wirelessly charged, but only if you buy a replacement back plate, which at time of writing, is yet to be properly announced

Expandable storage

While other flagship phones have dropped microSD support, the G4 has not only kept the feature but upgraded it, so it can now store an impressive two extra terabytes



Camera head-to-head: LG G4 vs Galaxy S6



The LG G4 and Samsung Galaxy S6's cameras are both 16MP, however, the G4 has the slightly wider aperture (f/1.8 versus f/1.9 respectively), which means its pictures are that bit brighter. A laser-guided autofocus and new colour spectrum sensor also ensure that images are sharp and can adjust for both natural and artificial light. Crucially, the LG G4 gives experienced photographers more control over how photos are taken with its unique Manual mode.



LG G4

Photos taken with the LG G4 in the daylight are extremely bright and pick up every detail



Galaxy S6

Samsung shots are a close second for the G4's, but not quite as sharp and with fewer editing options

if you enjoy shooting some hoops, it might say, "the weather will be mostly sunny today. It's the perfect weather to get out and play basketball." Other cards include traffic reports for places you visit regularly, callback reminders for friends that you haven't spoken too much recently, and many more. While we found this easy to understand at a glance, they were rather slow to update, which is a shame.

Swiping right from the homescreen will display the Smart Bulletin, which gives you a feed of your step count, daily calendar and other cards. One of these includes a shortcut to the so-called Smart Settings, which enable you to automate routine tasks like a built-in version of IFTTT, such as, turning on Wi-Fi connectivity when you get home. We found these quite helpful, but they were extremely limited with only eight formulas to play with. Ultimately, even with recent upgrades, the combined power of Smart Notice and Smart Bulletin still don't equal that of Google Now and probably won't win over users who were against the smart features on the G3.

In comparison to the rest of this generation's flagship phones, the LG G4 offers the best value for money. Whereas the HTC One M9 is on sale for £579.99 and the Samsung Galaxy S6 can cost as much as £720, the LG G4 starts at £519.99 for the brown leather edition, which is significantly cheaper than either of its nearest rivals. If you

would prefer to buy your LG G4 on contract, the brown leather model is exclusive to O2 for £36 per month two year contract, with a £19.99 upfront cost. This includes unlimited calls and texts and 3GB of data. If you're a power user, the G4 is available on EE with unlimited text and calls and 5GB of data for £36.99, with an upfront cost of £39.99 from EE through Carphone Warehouse. However, if you're looking for the cheapest deal, Vodafone are offering LG G4 contracts through Carphone Warehouse for £35 per month with nothing else to pay and unlimited texts, but only 1000 minutes and 1GB data. The LG G4 is also available on the Three network.

Should you buy it?

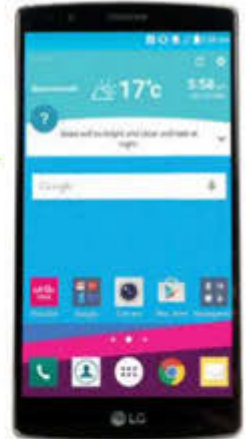
It is incredibly difficult to do anything different in the smartphone world, but LG have pulled it off with a mix of daring design and upgrades to key features. These include things that everyone can appreciate, such as the stunning display and tricked-out camera, without sacrificing the features that have become Android essentials, like the removable battery and the gigantic microSD support that is available.

However, it's other specs and software are arguably not as impressive as its nearest rivals. But LG compensates for this with a reasonable price, so if you like the leather look, we recommend getting the LG G4 today. ■

LG G4 information

Price **£519.99/\$TBC**

» More information lg.com
Supplied by **LG UK**



Battery life



A 3,000mAh battery ensures you'll get a full day's use of the G4, with options for replacing the cell and wireless charging

technical specs

» Operating system.....	Android 5.1 Lollipop
» Processor.....	Qualcomm Snapdragon 808 1.8Ghz hexa-core
» Memory.....	32GB storage/ 3GB RAM
» Dimensions.....	148.9 x 76.1 x 6.3 - 9.8 mm
» Weight.....	155g
» Display size.....	5.5-inch
» Display resolution.....	2560 x 1140 pixels (538 ppi)
» Front camera.....	8MP
» Rear camera.....	16MP (f/1.8 aperture)
» Connectivity.....	4G, Bluetooth 4.1, NFC
» Expansion slot.....	microSD (up to 200GB)

Performance

Fast and fluid to use, the LG G4's hexa-core doesn't benchmark as fast as the Galaxy S6

Design

It's striking leather design is refreshing change, while its UI has been streamlined

Features

The LG G4 is packed with features, with an impressive camera, display and 2TB microSD

Value for money

While it is still expensive, the G4 is still cheaper than its nearest rival

» Verdict

The G4's mix of bold design and improvements to core features make it a very impressive handset



Samsung Galaxy S6

With the Galaxy S6 on the horizon, can HTC's new flagship realistically compete?

Samsung have delivered success upon success with (or perhaps despite?) their approach to the Galaxy S range of flagship devices. Removable batteries, microSD expansion, consistent design (with varying materials) and TouchWiz 'enhancements' are all on the latest Android base.

With the release of the S5, however, things started to change. Although packing the latest and greatest internals and an ever increasing number of functions, sales of the device stalled, leading to speculation that Samsung's meteoric rise to Android dominance might be coming to an end. Here, we have the Galaxy S6, undeniably Samsung, but with a slightly different approach aimed at wooing buyers who might be considering defecting to another Android device or, more significantly, about to make the jump to the iPhone 6.

Full-metal jacket

At first glance, the Galaxy S6 looks like classic Samsung, pure and simple. Presented in white (although also available in black, gold and – if you can track one down – blue), the signature Samsung features are there. A big central home button, with capacitive keys on each side. Silver speaker grille with a 'dot' pattern. Power button on the right. Pick up the phone though, and straight away you'll notice significant differences from its predecessors. The edge of the device



The S6 Edge version has an impressive-looking curved design

No more waterproofing

In the pursuit of a slimline frame, the Galaxy S6 loses the waterproof feature of its predecessor. It's a worthwhile trade-off, with a more rugged 'active' version of the S6 likely to follow in the near future

Heart rate reader

The S6 includes a heart rate sensor just below the camera flash on the back of the device. The sensor can also be used as a trigger when you are using the camera app in selfie mode

Samsung Pay

The Samsung S6 will support Samsung Pay, a NFC based payment service. The service is expected to come to the UK later this year, however, an exact date is yet to be confirmed by Samsung





Get the hump

Fitting such a great camera in a 6.8mm thick body isn't easy, so Samsung haven't! The S6 includes a considerable camera hump, but the lens itself is recessed and protected if placing the device on a table

Fast charging

The fast charging feature included in the Galaxy S6 supports Qualcomm Quick Charge 2.0 chargers, despite not having a Qualcomm chip. This means that additional car and home fast chargers are readily available – a worthwhile investment as it really works

Small but powerful

The single speaker on the bottom of the S6 can't compete with HTC's BoomSound or Sony's stereo speakers, but the volume is ample and clarity is better than you'd expect. The position is susceptible to being accidentally covered, however, which is a shame

isn't plastic, it's metal. The back of the S6 isn't plastic or fake leather with fake stitching, it's glass. It feels well made in your hand, cool, solid and expensive – Samsung have finally awoken to the importance of premium materials. The buttons click with a satisfying action. The bevel on the metal edge looks gorgeous. The antenna separators around the edge and the speaker grille on the bottom might look very similar to those of a certain Apple device, but they work well here too. As well as giving the device a far more premium feel, the materials dictate a significant change for the S6. The back is not removable, meaning the battery is fixed. The right-hand side of the device is home to the pop-out SIM tray, but there is no microSD expansion on the phone. Both of these features were much loved by many Samsung fans of old and we think it's a worthwhile trade-off for the much improved build quality, but you may not agree. The S6 is offered in 32GB, 64GB and 128GB versions, so if you are willing to fork out the (considerable) additional cost for extra storage, the loss of microSD expansion at least, shouldn't be a show-stopper.

Stunning screen

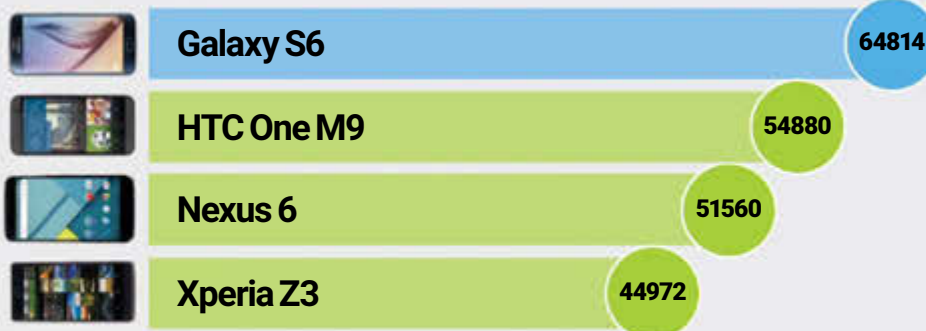
Samsung devices have long had market leading Super AMOLED screens and in this regard, the S6 certainly doesn't disappoint. While some manufacturers have opted to stick with 1920x1080 FHD screens, the S6 (and the S6 Edge) make the jump to QHD, with the 2560x1440 resolution on the 5.1-inch screen delivering a frankly ridiculous 577ppi. Two versions of the S6 are available – the 'classic' style with a conventional screen and the Edge version with a panel that curves over the left and right of the screen. That aside, the two phones are virtually identical and although the edge is certainly the more innovative of the two devices, the curve adds very little in utility, distorts on screen images and makes the device less comfortable to hold. We think the normal S6 is the device to have (and as an added bonus it's considerably cheaper than the edge). Brightness on the S6 screen is incredible and as with all Super AMOLED screens, colours really pop, even if some images can appear over-saturated. A number of different screen colour modes are available, enabling a certain degree of tailoring to suit your preferences. Inclusion of a QHD screen on a device with a display of this size, is frequently debated, generally in the context of whether there is a visible improvement over FHD, performance and to a lesser extent, battery life. All you need to know is that the S6 screen looks noticeably better than that of its predecessor.

Performance and battery

The Galaxy S6 doesn't use a Qualcomm Snapdragon processor. This is big news. For a number of device iterations now, Samsung →

Benchmark buster

The S6 Galaxy's Exynos 7420 processor clearly puts the flagship ahead of its peers



Review

Samsung Galaxy S6 information

Price **From £599 / \$699**

» More information samsung.com
» Supplied by **Mobility**

Battery life



The device performs as expected given it's 2600mAh battery, but unfortunately no better. Qi and PMA wireless charging is a boon



technical specs

» Operating system.....	Android 5.0.2 Lollipop
» Processor.....	Samsung Exynos 7420 octa-core
» Memory.....	32GB-128GB storage / 3GB RAM
» Dimensions.....	143.4 x 70.5 x 6.8 mm
» Weight.....	138g
» Display size.....	5.1-inch
» Display resolution.....	2560 x 1440 (577ppi)
» Front camera.....	16MP (f/1.9)
» Rear camera.....	5MP (f/1.9)
» Connectivity.....	4G LTE, 802.11ac, Bluetooth 4.1, NFC
» Expansion slot.....	N/A

Performance

Not 100 per cent lag free as promised, but still the fastest Android phone we've seen

Design

There's no cheap plastic or fake leather making it feel very well-made in hand

Features

Not crammed full of features like its predecessors, but packed with the best

Value for money

Stick with the S6 for value for money, though the S6 Edge's screen lets it down

» Verdict

The Galaxy S6 is the best Android device you can buy today, bar none. It's not cheap, but it is exceptionally good

have had two variants of their devices available – one (for large key 4G markets, such as Europe) with a Snapdragon processor, and a second version using an Exynos processor from Samsung themselves. The S6 is the first device to dispense with the Qualcomm version altogether, and it could be a master stroke. The Qualcomm chip that Samsung would likely have used, the Snapdragon 810, looks like a rare low-point. It's not as well performing as expected and it seems to have heat and power consumption issues. The octa-core Exynos 7420 in the S6, however, utilises a new 14nm manufacturing process that brings heat and battery benefits, as well as support for DDR4 memory and UFS storage technology. Looking good on paper is very different to performing well in real life but Samsung do seem to have cracked it. They promise a 'lag free' experience on the S6 and while that isn't 100 per cent the case, the phone offers what is the fastest Android experience that we've seen to date. Backed up by a generous 3GB of RAM, the S6 flies, wholeheartedly vindicating Samsung's decision to go with their own processor solution this time round. The Galaxy S6's non-removable battery is a 2600mAh capacity item, which is not a big battery for today's devices. The S6 does feature quick-charging support together with built-in dual standard (Qi and PMA) wireless charging, but while it's not going to set any records for longevity, the stamina isn't bad. If you are anything but the lightest of users, however, you might need to consider a midday top-up.

Simplified software

Lots of aspects of Samsung devices fall into the 'love it or hate it' category but Samsung's own take on Android, TouchWiz, is almost universally disliked. Excessive blips and bleeps, insane feature bloat, confusing UI and old fashioned icons all combined to offer an experience that was very far from the stock Android experience that Google intended. Make no mistake, the Galaxy S6 still includes TouchWiz and it is guilty of some of the above, but to a much lesser extent. The system sounds have been toned down, many of the useless features have been culled, app icons have been updated and confusing pictorial icons have been replaced with more descriptive text versions. The calendar is still S Planner, third party apps are still prevalent and it doesn't feel closely related to stock Lollipop, but Samsung should be commended for making a marked improvement in their software. In some regards, the improvements have come courtesy of a hardware upgrade. One example is the fingerprint sensor. A terrible, frustrating swipe-based experience on the S5, it's now really useful and almost infallible thanks to it's iPhone like touch sensor. Going back to unlocking a device with a PIN or pattern feels like a step back to the past.

16MP shooter

As Android fans and Android owners, we've waited a long time for a camera to rival that of the iPhone and it's finally here. The Galaxy S6 had a very good camera, provided you were taking a shot in good light. The Galaxy S6 takes great pictures, all the time. With a 16MP sensor, f/1.9 aperture, optical image stabilisation and real time HDR, the S6 actually packs double the resolution of the iPhone for greater detail but can focus and take pictures just as fast, with just as good results. The front camera, a 5MP unit which also has a f/1.9 aperture, also takes great snaps. Again, the Samsung software simplification is evident, with a much less cluttered camera interface that also includes manual controls. Full Lollipop Camera2 API support is built in, which means third party manual camera apps from the Play store (with full RAW support, for example) work well. The S6 uses a single LED flash while many of its peers use a dual-tone flash.



The S6's powerful rear camera juts out of the back, spoiling the streamlined design, but producing great pictures

In practice, using the flash on phones is generally a bad idea, but the Samsung produces surprisingly good results, again cementing its place as unquestionably the Android phone to have for the mobile photographer.

Verdict

The Galaxy S6 is an incredibly interesting device. It represents Samsung being 'less Samsung'. In stepping back from cramming as many features and gadgets into the phone (although don't think this is a bad thing, the S6 is still packed with technology), they've achieved what many doubted they could – a really excellent phone that thoroughly deserves to get them back on track. The only downsides of the device are the relatively low capacity battery and incredibly reflective and fingerprint prone finishes on the non-white devices, but if you can get by with plugging your phone in every now and again, the S6 will reward you with class leading experiences across the board. ■

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Karbonn A5S information

Price **£54.99/\$89**

» More information karbonnmobilesuk.com
» Supplied by **Karbonn**

Battery life



The A5S sports a small battery at just 1,400mAh but it doesn't have a lot to power



technical specs

- » Operating system.....Android 4.4.2
- » Processor.....MediaTek MT6572 1.2GHz dual-core
- » Memory.....4GB storage/ 512MB RAM
- » Dimensions.....124.2 x 64 x 10.1mm
- » Weight.....130g
- » Display size.....4.0-inch
- » Display resolution.....800 x 480 pixels
- » Front camera.....5MP
- » Rear camera.....0.3MP
- » Connectivity.....3G, Bluetooth
- » Expansion slot.....microSD (up to 32 GB)

Performance

Slow to move through transitions and unable to handle multiple tasks

Design

It sports a fairly basic design, we don't like the scratchy backing and speaker placing

Features

Nothing of interest. Stock Android apps are preloaded and the camera is poor

Value for money

This is one of the cheapest smartphones available so the value for money isn't bad

» Verdict

We wouldn't recommend this phone as it's quite frustrating. Good alternatives are available at a slightly higher price

Small screen

The small 4-inch screen leaves a large bezel at both the top and bottom of this device. It's not a bad screen but when playing videos you can notice the low pixel count and slightly washed out colours

Capacitive buttons

The navigation buttons at the bottom of the device don't always respond to the first tap, which does get annoying fairly quickly

Dual SIM

Dual SIM is a good feature for a budget phone as it suits people who go abroad a fair deal and may not want to risk a pricier model. One SIM can use 3G and the other can only work off a 2G signal

Storage

It is loaded with 4GB of storage, of which 2GB is taken up by preloaded apps – some could be uninstalled. For a phone at this price, however, that isn't bad and it can be boosted to 32GB with a microSD card



Karbonn A5S

Karbonn has made a phone that's cheap but is it cheerful?

Indian smartphone manufacturer Karbonn has been trying to carve a niche for itself as a low-cost mobile provider for people who just need something simple for basic tasks. The Karbonn A5S is currently available in the UK for the bargain price of just £54.99, but be aware that this really is a bargain basement phone.

The spec sheet makes for very average reading. It runs on Android KitKat 4.4.2, houses a 1.2GHz dual-core processor, has a 1,400mAh battery and its 4-inch screen measures just 480x800 pixels at 233ppi. The rear camera takes 5MP snaps while the front camera is a paltry 0.3MP. Sometimes phones with limited specs and a low price point have the ability to surprise you with hidden reserves of quality, like the Alcatel One Touch Idol Mini or Huawei Ascend Y300, but it is hard to find here.

Right from the off it's sluggish, taking some time to transfer between pages and screens while managing just a single task. Trying to play a game or surf the web seems too much for the dual-core processor to handle at times, with performance rapidly becoming limited.

The photos taken by both cameras are shaky and don't pick out features well. Focusing takes

too long and you can forget about using HDR mode as the resulting blurry images aren't good.

The design of the device is definitely lacking as well. The top and bottom bezels are pretty big and the side ones are a little on the large side too, making the screen look dwarfed. The backing is a scratchy leather-effect plastic and the power button feels like it's going to fall out of the casing at any moment. It's a simplistic design but unfortunately has little appeal.

The audio is pretty good but the speaker, placed right at the bottom on the back, is too easily covered up by your fingers when in-hand, spoiling the sound. Videos tend to play smoothly but the low pixel count really shows and the colours are very basic as well.

Around half of the device's memory is available out of the box and that can be upgraded to 32GB, which should be plenty as we can't imagine you'll be saving lots of photos or videos.

One plus point is the dual-SIM capability, so you can switch to a new SIM card if you are travelling or just get low on credit. The second SIM can only access 2G signal, however.

The battery life seems good but its design, specs and performance are mediocre.



Acer Iconia Tab 8

If you are looking for a low cost, serviceable 8-inch Android tablet, then the Acer Iconia Tab 8 A1-840FHD should be on your list to buy

Choosing a low cost tablet can really be a minefield. Manufacturers always have to compromise somewhere to hit a price, and you can really notice this if your budget is small. The £160 Acer Iconia Tab 8 seems to hit a lot of the right buttons and could be a great choice.

The build is solid. The aluminium back should provide protection from knocks and drops, while the front design is rather Samsung-like and you shouldn't feel other people can see that you are carrying a 'cheapie'.

The 8-inch display impresses with its 1,920x1,200 resolution. It is clear and sharp, but that noted, it is not without its issues. The screen is very reflective, which can make viewing it from a side angle tricky. Also, the brightness doesn't go very high and there's no light sensor so you have to adjust the brightness manually.

There are some nice features on the software and hardware side. Hardware wise, we like the HDMI port that sits on the top edge. HDMI is quite a rarity at the lower end of the price range, so it's a real plus point.

On the software side, Touch Wake is a big plus. There's a configuration setting in the pull

down settings area, and you can set both two thumb gestures and five figure gestures. Two thumbs wake up doesn't really need two thumbs – just two taps where you would logically put your thumbs if you pick the Iconia Tab 8 up two handed. The five finger wake up is great if the Tab is on your desk – you just lay your hand on it to wake the device.

It isn't all rosy though. The 5MP rear and 2MP front cameras are both average. Ditto as regards the battery life. Acer bungs a lot of software on top of Android 4.4 including the Amazon app store and MP3 store, Amazon local and Kindle, and loads of Acer cloud apps – five of them take up the first app drawer row. We had just 9.4GB free of the 16GB of on board storage. At least a microSD card slot lets you add more memory.

Stereo speakers might sound like a treat, and their grille on the back of the chassis looks stylish. But top volume isn't that high and the quality is very tinny.

The quad-core 1.33GHz Intel Atom Z3745 processor is helped out by 2GB of RAM and seems up to the job, though, and that's important when you are looking for a budget buy.

Review

Acer Iconia Tab 8 A1-840FHD information

Price **£160.00/\$199.99**

» More information acer.co.uk
» Supplied by **Acer**

Battery life



The 4600mAh battery should be able to do better than it does, and we found life to be disappointing



technical specs

» Operating system.....	Android 4.4
» Processor.....	Intel Atom Z3745 1.33GHz quad-core
» Memory.....	16GB storage / 2GB RAM
» Dimensions.....	215 x 130 x 8.5 mm
» Weight.....	360g
» Display size.....	8-inch
» Display resolution.....	1920 x 1200 pixels (283 ppi)
» Front camera.....	5MP
» Rear camera.....	2MP
» Connectivity.....	Wi-Fi, Bluetooth
» Expansion slot.....	microSD (up to 32GB)

Performance

No major issues in performance, though a lot of software takes up storage space

Design

The Samsung-like design won't make you feel like you're holding a budget device

Features

Some nice software and hardware features including the HDMI port which is impressive

Value for money

Ticks a lot of the boxes for a reasonable price, Acer doesn't skimp on quality

» Verdict

The Iconia Tab 8.1 is a well-built tablet with the advantage of HDMI. Battery life is not great, though



Reviews

NGM Forward Endurance information

Price **£160**

» More information clove.co.uk
» Supplied by **Clove Technology**

Battery life



This handset's immense 5000mAh battery will last for days even with intense use, but does weigh the phone down



technical specs

» Operating system.....	Android 4.4.2 KitKat
» Processor.....	Cortex-A7 1.3Ghz quad-core
» Memory.....	8GB storage / 1GB RAM
» Dimensions.....	144.5mm x 71.45mm x 10.4mm
» Weight.....	180g
» Display size.....	5-inch
» Display resolution.....	720x1280 pixels (294 ppi)
» Front camera.....	3.2MP
» Rear camera.....	12MP
» Connectivity.....	3G, Bluetooth, FM
» Expansion slot.....	microSD (up to 32GB)

» Verdict

With a battery that won't quit, a 12MP camera and optional dual SIM, this is the ideal handset for taking on a long trip



Dual SIM

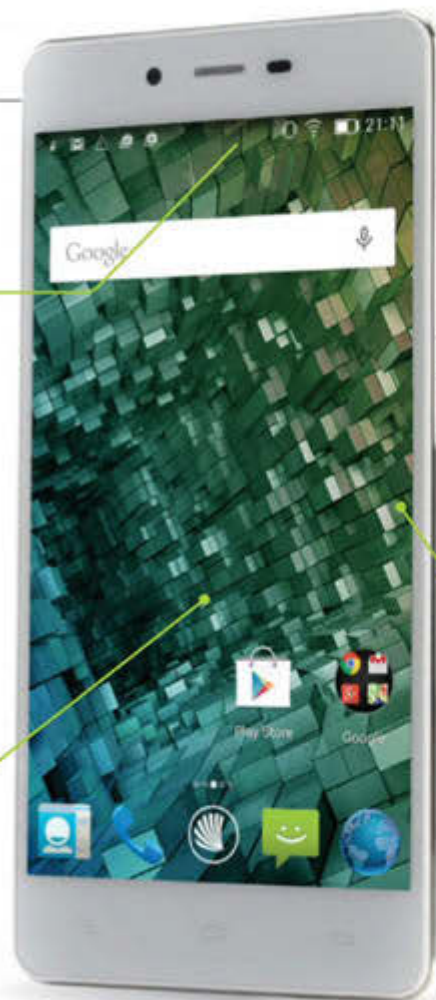
Aimed at an up-and-coming audience, the NGM Forward Endurance has two SIM slots so you can easily switch between business and personal calls. If this isn't something that appeals, you can fit an SD card into the spare slot

Beautiful on the inside

While the handset isn't much to look at (though you have a choice between anonymous white and generic black), the light tweaks to the KitKat 4.4 OS have more flair, with daring wallpapers and on-trend bubble icons

Rapid response

While the Forward Endurance has an off-brand processor, it has a healthy 1.3Ghz quad-core with 1GB RAM. It handled day-to-day use fine, but stuttered through graphic-heavy games. It's AnTuTu benchmark was 17741, slightly behind the similarly priced Asus ZenFone 5



NGM Forward Endurance

This Italian stallion packs 1,000 hours of battery life

NGM is a not a brand name many will know outside of Italy, and to look at the Forward Endurance's rather dull design, you might not think you need to. But they have managed to pack a gigantic 5000mAh battery into the handset's nondescript case.

To put this in context, many of Android's leading lights don't offer anything close to this battery size. For instance, the Samsung Galaxy S6 has just 2550mAh, LG G4 has 3000mAh, and both the Note 4 and Nexus 6 have 3220mAh. Admittedly, they all have battery saving modes to extend battery life, but all these £500+ premium devices will still need charging before this £160 handset will. NGM say it has 1,000-hour standby time and during our testing with intensive daily use, we didn't need to charge it for three days.

But, unless we're taking a long trip, is a super power cell a reason to buy a phone? Fortunately, the Forward Endurance also packs an impressive 12MP rear camera. Photos are rich with detail even before enabling the HDR mode, but the default editing features are basic.

Though the overall design is a bit generic and capacitive buttons, while they're subtle, do feel a

bit retro, the Forward Endurance is made out of sturdy materials. With Gorilla Glass protecting the screen and tough aluminium frame, you don't worry about bangs and scrapes. Its Achilles heel is a removable plastic back, which feels a cheap and occasionally comes loose.

The Forward Endurance does have its downsides – mostly stemming from the battery that grabbed our attention. This handset is heavy. At 180g, it weighs less than a Nexus 6 but when held together, it feels clunkier. This weight is also obvious when it's in your pocket.

Also, with such a huge power pack to accommodate, there isn't a lot of space for much else. The already limited 8GB storage is reduced to just 5.23GB with system apps and a few preloaded extras. However, with microSD support you can add an extra 32GB, but this will mean sacrificing the option of a dual SIM.

For the same price as this NGM phone, you could pick up a Moto G running Lollipop and with higher-quality components, or a ZenFone 5 with a better-looking build. But we were still impressed by the Forward Endurance, which will be running long after others have run out of juice.

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Reviews

LG Watch Urbane

LG's latest Android Wear goes all out with the bling factor. But is it just style, or substance too?

Smartwatches are hot news again. It might have taken the entry of Apple to the segment to really ramp up the excitement, but there's no question that the release of the Apple Watch has helped raise interest again in Android Wear. LG launching their Urbane models just as the rival offering comes to market may be planned or it may be a coincidence, but never has Google's alternative been better placed to offer a desirable alternative.

Prior to the release of the Urbane, there was very clearly one Android Wear watch to buy if you wanted the best possible hardware – the G Watch R, also from LG. While quite large by virtue of its bezel, the stunning P-OLED (plastic OLED) screen and Snapdragon 400 internals gave a great user experience. This was in stark contrast to the Moto 360, which had a larger but inferior screen and a badly out-of-date processor that led to disappointing performance and terrible battery life.

The Android Wear version of the Urbane – which is in reality a dressed up version of the G Watch R – is available in two finishes, silver or rose gold. Confusingly, there is also a LTE enabled version of the Urbane which doesn't run Android Wear at all, but LG's own OS instead. Both the silver and gold versions have a genuine leather strap, black with contrasting white stitching on the silver and brown with cream stitching on the gold. The straps feel a little stiff straight out of the box, but seem to be of good quality. One big benefit of the Urbane (as with LG's previous Android Wear efforts) is that they support standard 22mm straps.

The big selling point of the Urbane is that it has an all metal body. The button on the right of the device is now more pronounced and the bezel around the screen, while no thinner than on the G Watch R, is now flatter which does make it feel smaller and also makes the fantastic screen 'pop' even more than it did before. It's almost cliché, but the Urbane really is the first Android Wear watch which could pass for a piece of high quality jewellery, particularly when paired with the right strap.

As well as being impressive on the outside, the Watch Urbane is the first Android Wear



Watch faces

LG have done a great job of providing watch faces that complement the design of the device perfectly on the Watch Urbane. Both modern and classic designs are included in silver and gold to suit the colour of the watch

Heart rate monitor

We found the heart rate monitor accurate to within a few percent of a dedicated chest strap. The addition of a continuous mode is particularly unique, although it's another feature that could (should) be available on the G Watch R



Review

LG Watch Urbane information

Price **£238.70 / \$349.99**

» More information www.lg.com/uk
» Supplied by **Amazon UK**

Battery life



The 410mAh battery charges in under an hour and lasts for up to two days of average use



technical specs

- » Operating system..... Android Wear 5.1
- » Processor..... Snapdragon 400 1.2GHz quad-core
- » Memory..... 4GB storage / 512MB
- » Dimensions..... 45.5 x 52.2 x 10.9mm
- » Weight..... 66.5g
- » Display size..... 1.3-inch P-OLED
- » Display resolution..... 320 x 320 pixels (348 ppi)
- » Connectivity..... Wi-Fi, Bluetooth

Performance



Runs Android 5.1 so you are sure to have the latest versions

Design



One of the best looking Smart Watches that we have seen

Features



Has some unique LG features, some more useful than others

Value for money



Pricier than its predecessor, the G Watch, which is very similar all round

» Verdict

The LG Watch Urbane is big, it's expensive, but it's also great. As good as Android Wear gets today



device to include Android 5.1 on the inside, straight out of the box. After powering on the watch the changes are immediately apparent – the new version of Wear feels like it has the look and functionality that should have always been there. It's brighter, clearer, slicker and simply more intuitive and easy to use.

See our Android Wear 5.1 feature for the full low-down on the improvements.

A couple of unique LG experiences have also made it on to the Urbane. While some are not that useful (a torch app to turn the screen white and bright – really?) others, such as the inexplicably Urbane-only LG Call app, are excellent additions. Also preinstalled is LG Pulse, which uses the heart rate sensor on the back of the device to measure your pulse not just as a one off, but continuously – great for when you're doing a workout.

The biggest problem the Urbane has in the market is not whether it is a great device, but whether it is worth the considerable price premium over its G Watch R sibling. The internals are identical, the software will be identical in due course and so the price premium is purely for aesthetics. There's no question that the watch is better looking, but how much you are willing to pay for aesthetics is completely up to you.

Eye catching

"Is that the Apple Watch?" Get used to that question – the Watch Urbane certainly stands out on the wrist by virtue of its size and shiny finishes. The bulky exterior may also be an issue for smaller wrists

Wi-Fi support

Up until now Wi-Fi has remained dormant in Android Wear devices, but with Android 5.1, it can now be used for connectivity even when out of Bluetooth range. Configuration is automatic and it really works extremely well

Magnetic docking

The Watch Urbane uses a similar (but not identical) magnetic dock to the G Watch R. It's effective and convenient, provided you have either the stock strap or a replacement strap that splits in the middle



Festival gear

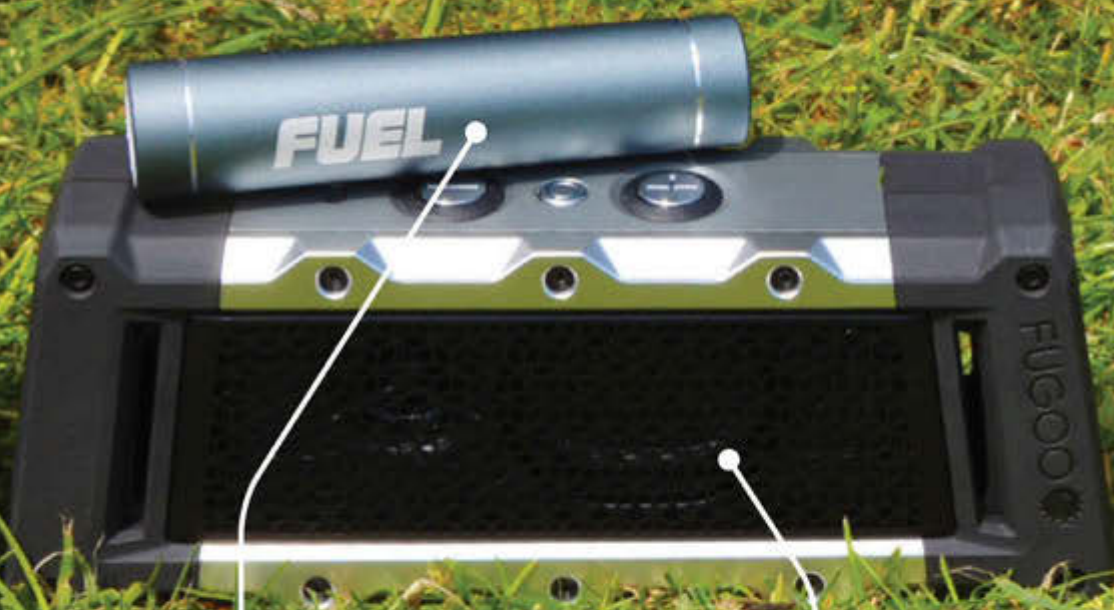
With festival season about to get into full swing, here are the best gadgets to get the party started



Cobra MicroTalk 2 way radios

» Price £69.99/\$N/A
» More information maplin.co.uk

If there's one thing you're guaranteed to do during a festival, it's lose your friends. In a big venue it's a problem and as many take place in fields away from mobile masts, your phone might not be of any use. To replace your Android device during festival time, you could use these Cobra MicroTalk MT975 walkie-talkies. The range is excellent, managing fairly clear audio from three floors away and it has 121 channels to minimise potential disruption.



Fuel Active Portable Charger

» Price £14.99/\$12
» More information patriotmemory.com

There are a number of power banks on the market, but what sets this device apart is the addition of a flashlight to provide you with a dual benefit. Power outlets are often in short supply at festivals, so this lightweight device will give most phones nearly another full charge as it has a 2,000mAh capacity. It has two brightness settings and a flash setting so you can find your way back to your tent after the festivities are over for the evening.



Fugoo Tough portable speaker

» Price £189.99/\$229.99
» More information fugoo.com

Festivals are no place for anything that's breakable, which is where the Fugoo speaker comes in. Waterproof, snowproof, mudproof and shockproof, it will be able to take pretty much anything you throw at it. It passed our drop test and produced an excellent sound with a thumping low bass. It's light and portable too and the voice telling you when it's on or connected is a nice touch. Small and mighty, this ideal for travel.





iWALK Extreme TRIO10000 Back-up Battery

» Price £64.99/\$84.99
» More information iwalkuk.com

Three or four-day festivals are great, but when smartphone batteries last two days at the very best, you could end the weekend with nothing to take photos on or call your friends or family with. The iWALK Extreme TRIO10000 Backup Battery has a monster 10,000mAh battery that will enable you to charge three devices at once. It also has a display on the front that tells you how much charge it has left so you can manage your power effectively.



Lava BrightSounds portable Bluetooth speaker

» Price £39.99/\$N/A
» More information www.amazon.co.uk

Dual-purpose products are important when camping as they can save space. When the music stops playing and you head back to your tent, this Bluetooth speaker doubles as a light that you can hook onto your tent's roof. The light is not too bright and would provide just enough to read by without being blinding. The speaker is a good 360 degree affair, but does struggle at high volume and pitch. Overall, it's a handy product, though.



Cobra JumpPack

» Price £79.99/\$129.95
» More information www.argos.co.uk

If, at the end of your weekend, you trudge back to your car only to find it won't start, it could ruin the whole event. Luckily, Cobra's JumpPack, whose main role is a smartphone battery recharger and houses a 7,500mAh battery, doubles as a vehicle jump-starter. Yes, this tiny, 300g device can clip onto your car or motorbike and give it that kickstart needed. Not only that, but it's a flashlight as well, making it an invaluable festival companion.



AutoMate (Beta)

An Android Auto-style car dashboard



When Google announced Android Auto last June, it caused a stir. The ability to view useful info and all your Android notifications, cast from a smartphone, on a car dashboard screen holds obvious appeal. However, at the time of writing, there's still no current car model that supports the system, so the only way to use it is by forking out at least £700/\$1,000 for a compatible Pioneer head unit.

Therefore, it's no wonder that many Android owners were asking why the Android Auto system couldn't simply be run on a phone or tablet mounted on the dashboard. Step forward AutoMate, an unofficial alternative app that aims to solve the problem. Currently in public beta, it can be downloaded via the developer's Google+ community page: goo.gl/ZdsOKX.

Since AutoMate needs access to the system and other apps, it requires a long list of permissions, along with full notifications access. Upon launching, you'll notice that the user interface looks very similar to that of Android Auto. It has a simple, clean design with a row of icons at the bottom – for Maps, Phone, Home, Music and Shortcuts. The main part of the screen is used to display information and notifications on Google Now-style cards. By default, the top card shows the date, battery percentage and speed (in mph or km/h). The weather card gave us conditions for Toronto at first, but a quick tap refreshed the data and switched it to our location. Other cards pop up to show various notifications, such as calls and SMS messages – just tap the card to respond. One limitation is that it only works with the default SMS app, so not Hangouts or Whatsapp etc. It

doesn't yet support calendar events either, although that's in the pipeline.

Tapping the Phone icon brings up a stock-style screen with favourite contacts plus icons for call log, dialler and contacts list. The Music icon starts the default player, which can be switched via the left menu, with artwork, info and playback controls. Tapping the Maps icon brings up Google Maps; due to Google restrictions, using turn-by-turn navigation switches you out into that app, but it's not a big problem and you still get voice directions when in AutoMate. The Shortcuts icon shows any apps you've added to this screen, plus an interactive status bar for Bluetooth, screen brightness, rotation lock and Wi-Fi.

AutoMate's voice command system is useful for when you're driving; after tapping the mic icon, you can issue commands such as 'play next track' and 'directions to

2 hour wonder

Want your money back? You've got 120 mins to decide!



» 0-40 minutes

The clean, card-style interface is easy to read



» 40-80 minutes

Some app notifications are not yet supported

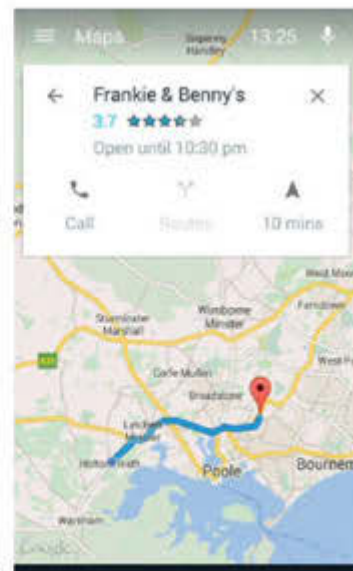


» 80-120 minutes

Lots of settings, including a premium launcher option

keep

refund



If you hit the navigation icon, it'll switch out into the Google Maps app

nearest hospital'. However, this feature is still in early development and proved buggy in practice.

While it has some limitations, AutoMate offers myriad settings, including an option to have incoming SMS messages read out. You can also get AutoMate to start up automatically when connected to a certain Bluetooth device. A few premium options, including using AutoMate as the phone launcher, are unlocked via a £2.53/\$3.17 IAP.

» specification

Price **Free + IAPs**

Designed for: Phone

Requires Android: 1.6

» verdict

Performance



Design



Value



A useful alternative to Android Auto, albeit with some limitations



The homescreen shows info and notifications on Google Now-style cards

» best free alternative



ULTIMATE CAR DOCK » This car dashboard app offers 30 custom shortcuts to functions or apps

PRO Landscape Home

Layer plants onto a photo to design your dream garden



Many of us like to potter, but if you want to achieve a stunning garden, you need to plan it. PRO Landscape Home helps you to visualise designs before you get your hands dirty doing any physical work or planting. Just snap a photo of your house, yard or garden and you can then superimpose

images of various plants, trees, pots, furniture and other items. This is hardly a sophisticated image editor, more of a cut-and-paste collage job, but it does let you play with designs to see how they might look.

After taking a background photo, you can start adding items. Tapping the tree icon brings up a menu with options to use a free library, paid

library or offline sample images.

Whichever you select, there's an annoying wait for the app to 'gather image library data'. There are seven categories – Tree, Shrub, Flower, Groundcover, Paver, Misc and Lighting – most of which offer subcategories, and plants can also be filtered by climate zones. Sadly, the free library is pretty sparse, with only a handful of items in each subcategory. To unlock the full range (2,000+ items), you'll need to make a £12/\$14.99 in-app purchase, although you can preview it before.

There are more delays after selecting an item and adding it to the main image. You can then position and resize it. A toolbar on the left lets you move objects forward/backward, duplicate and flip them. Slightly fiddlier is creating areas of grass, mulch or

paving; you need to draw a path within the placed material to cut out the desired shape. It's easy to accidentally move items too, although they can be locked individually, which is useful.

» specification

Price Free + IAPs

Designed for: Phone and tablet
Requires Android: 4.1

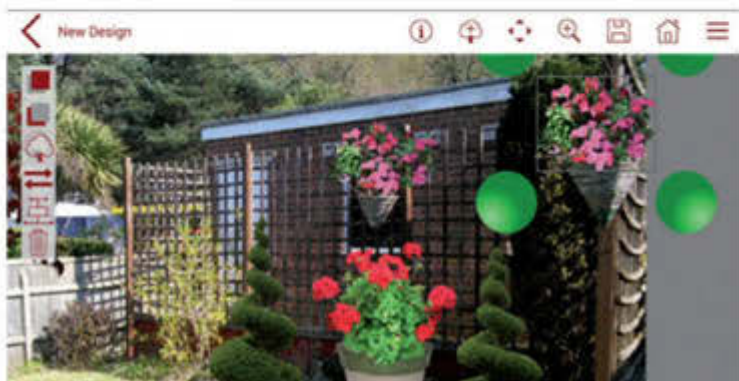
» verdict

A rather basic visualisation tool that could prove useful



» like this? try this!

Gardenate
All the info you need to grow your own fruit and veg and track your plantings



Resize items using the green handles; extra options are in the left toolbar

Phonograph Music Player

The best-looking player around?



After being in private beta for some time, this attractive music player is now available on the Play store in public beta form. For those who prefer storing tracks locally on their phone to streaming them, it offers an appealing alternative to most stock music players. Built using the

Material Design guidelines, it does look rather lovely, particularly on the album covers screen. Custom settings enable you to alter the colour scheme and number of grid columns.

The fast interface is easy to navigate and an omnipresent play/pause button is handy. Artist photos and bios are provided via Last.fm integration – as are album covers that you can download in the tag editor, where you can also correct errors in the track info. Other standard features include playlists, an equaliser, play queue, plus a homescreen widget.

» **Price** Free

» **Designed for** Phone and tablet

» **Requires Android** 4.1



» **best free alternative**

SHUTTLE MUSIC PLAYER » Another attractive music player with automatic artwork downloading and some premium features



Puddl

Organise your studies and homework



Written by a high school junior, Puddl: Student Tasks & Planner is a

simple but effective to-do list app aimed at students. Signing up for a free account lets it sync tasks between devices. The Material Design interface starts blank, then tap the + button to add a task with a description, notes, date, time and class. Colour-coded classes are



created via the 'Order by' menu, which lets you to sort tasks by class or due date. You can also search for help on a task via Quizlet, Google or Sparknotes.

» **Price** Free

» **Designed for** Phone

» **Requires Android** 4.0



UltraTuner

Ultra-precision tuning for your guitar



Ensure your guitar is in tune with UltraTuner. Working via the mic input

or any audio interface, its USP in a crowded market is ultra-precision tuning – to within 1/100 of a cent. While Stage mode offers quick, visual flat/sharp correction during a live gig, Studio mode delivers detailed info via two visualisation modes: a live waveform readout and



a curve which tracks a note over time. Other settings include custom A note pitch, temperament type and key shifting as well.

» **Price** £2.99/\$4.99

» **Designed for** Phone

» **Requires Android** 4.0



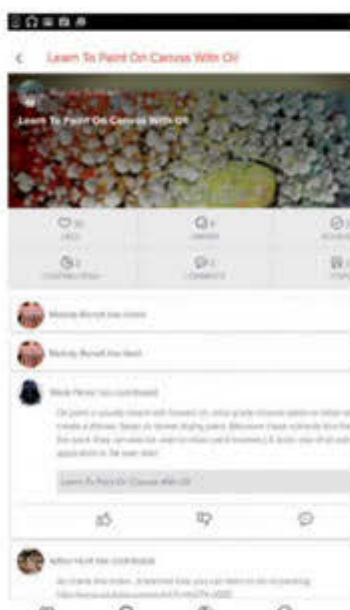
Linkagoal

The social network with a goal

g Linkagoal is a social network that aims to link like-minded people who have similar goals they're working towards. Upon signing up, you're asked to complete a profile and then follow some suggested users. The Home feed lists other users' goals – tapping one shows who has liked, linked, achieved, commented on or contributed to it. You can also browse the myriad categories in the Explore section too.

Naturally, you can add your own goals, with a title, description, start/end dates and category. We couldn't find an option to add a background image – nor to immediately add steps for the goal, although you can do so later. Perhaps this is why the steps aspect is so little used?

While we came across some genuine goals and useful contributions from other users, we had to wade through a lot of inane ones, such as 'listen to country music on a road trip'. So we have to wonder whether Linkagoal really has a genuine purpose.




Other users can like, link, comment on and contribute to a goal

- » Price Free
- » Designed for Phone
- » Requires Android 4.3



Caliber

Instant messaging exclusively for business contacts

 Originating on iOS as a Tinder-style app for new business contacts, Caliber has arrived on Android with a new focus on instant messaging. As it's intended for business use only, you need to sign up via a LinkedIn account. You can also sync your LinkedIn contacts; any already using Caliber will appear in your chat contacts so you can IM them in Caliber. In theory, you can also send LinkedIn InMail messages to

non-users, however, upon tapping a contact we couldn't see an InMail option (unlike in the iOS version). That's if you can find who you're looking for in the first place – there's no search function for LinkedIn contacts and they're listed in non-alphabetical order.

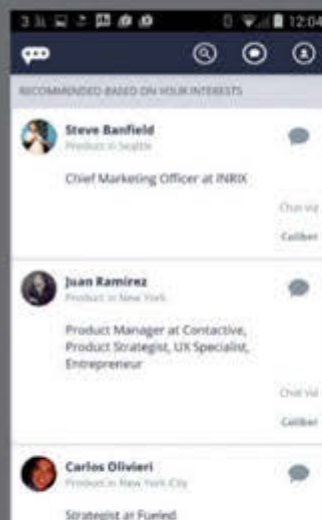
The IM interface is pretty standard, with a conversation thread showing an avatar, name and time for each message. However, there's no way to send attachments which seems a glaring omission –

without this we can't see how Caliber could possibly supplant email for business communication. As you'd expect, you get notifications for incoming messages, although we couldn't find an in-app option for these.

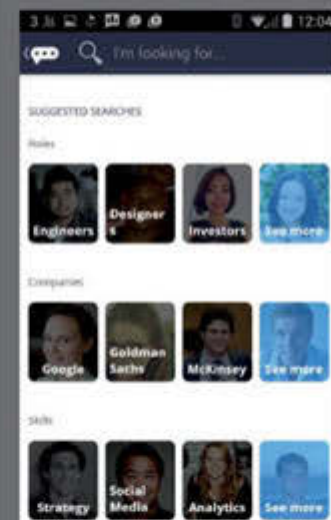
The strongest part of Caliber is the facility to discover potential new business contacts by searching for various roles, companies and skills. It's a shame you can't filter an existing search by location, although you can look for one individually. To help you



Chat with business contacts via the standard IM interface




Caliber suggests new contacts and you can send a chat request to any user



Browse suggested roles, companies and skills or just do a search

Trepn Profiler

Qualcomm's official benchmarking tool


 Qualcomm's powerful utility will profile the performance of devices with a Snapdragon, Exynos, MediaTek or Tegra processor. The main menu offers six tools, most of which can be overlaid onto the screen to view the real-time results while using other apps. Alongside CPU frequency, usage and load, you can see performance graphs for the CPU and GPU (graphics processor) – this can reveal whether an app is limited by either chip. The network activity tool shows how battery

power is affected by it, while the 'mobile data detective' reveals which apps are using the most data. While all of these stats will be of most use to developers, they can tell you if a particular app is overworking the chipset or using a lot of data. In addition, an Advanced mode lets you profile the system or an app, then analyse the results.

- » Price Free
- » Designed for Phone
- » Requires Android 4.0




There are six main tools; tap the square icon to overlay the results on the screen

» like this?  **PCMARK** » Its various tests emulate everyday usage to check your device's real-world performance

get some background info on a new (or existing) contact, you can view their work history, LinkedIn page and even Twitter account. You can send a chat request to a non-contact and to help avoid being bombarded by spam, recipients only get a weekly summary of requests which are automatically deleted after two weeks.

Caliber certainly has potential as a business-focused IM and networking service. However, the Android app requires some major fixes and improvements to make it genuinely useful.

» like this? try this!

 **Telegram** This security-focused IM app features end-to-end encryption and a self-destruct option for messages

» specification

Price Free

Designed for Phone and tablet
Requires Android 4.1

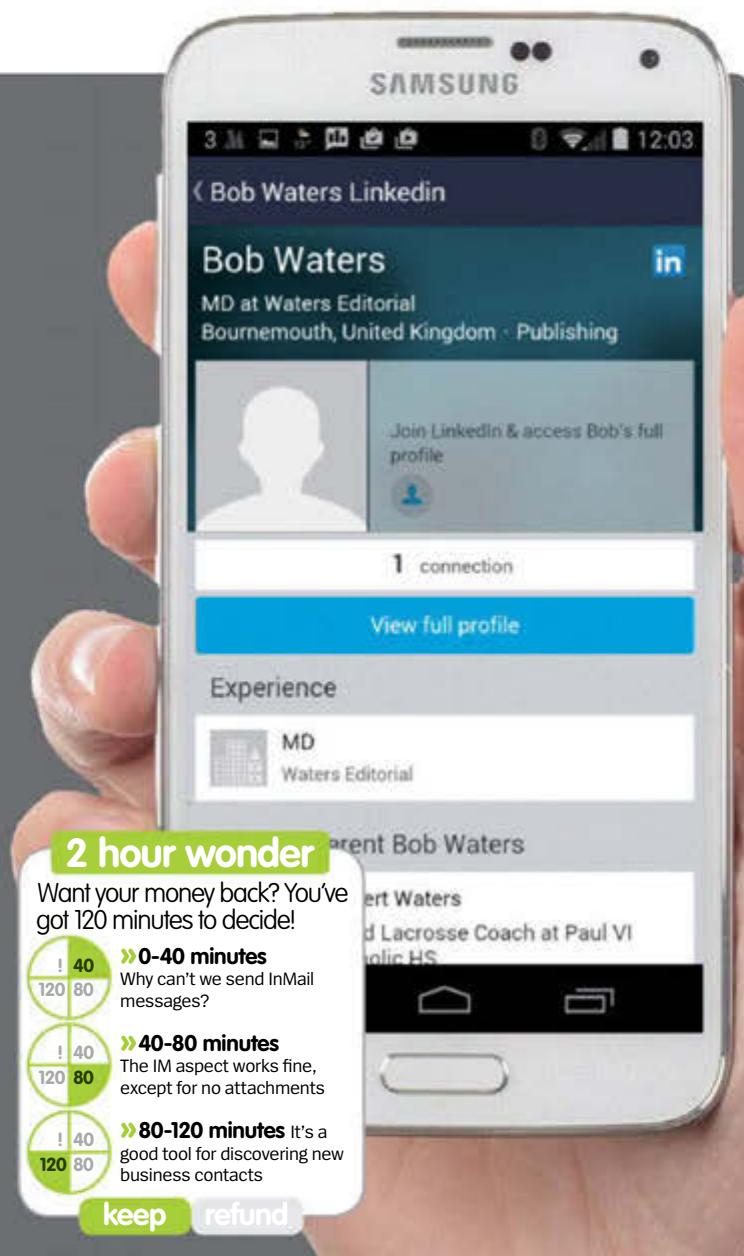
» verdict

Performance 

Design 

Value 

A potentially useful service, but the app does need some improvement



2 hour wonder

Want your money back? You've got 120 minutes to decide!



» 0-40 minutes

Why can't we send InMail messages?



» 40-80 minutes

The IM aspect works fine, except for no attachments



» 80-120 minutes It's a good tool for discovering new business contacts

keep refund



Various effects, frames and stickers can be applied after creating the collage

uMash Collage Generator

Turn photos into grid-based collages



The idea of an app enabling us to create artistic collages from photos is exciting. Unfortunately, this isn't it. Instead, uMash merely lets you create grid-based 'collages' from your photos, with no option to veer from its template.

On the plus side, you can source the photos from various places: local storage, Flickr, Instagram, Facebook, Google+ and others. Once you've selected images, it takes a while for uMash to process them before generating a collage. There's little

creative input, other than using the bottom icons to reposition/resize images in their frames, adjust the border size and select the overall layout size/shape. We'd have liked the ability to alter frame sizes manually and to change the image order. However, upon saving the collage, you do get to apply effects, stickers, text and a frame.


» Price Free

» Designed for Phone

» Requires Android 4.0.3



» like this? try this!

 **FUZEL COLLAGE** » Choose from a large range of templates, including angular ones, and add various decorations

quickhits

top apps for...

5 Weather



Weather Underground
Free + IAPs

Combining crowdsourced user info with data from over 33,000 weather stations, it delivers accurate, hyperlocal forecasts. The interactive map has multiple layers, including radar, and a resizable widget.



1Weather: Widget

Forecast Radar Free + IAPs

One for widget lovers, 1Weather comes with several reconfigurable ones, including three clocks. The main app features a slick interface with the option for live or custom backgrounds. Lots of map layers, too.



The Weather Channel
Free

A popular choice, it features a smart interface and offers numerous forecast options, along with extra information such as ski conditions and pollen levels. There are also weather-related videos to watch.



AccuWeather
Free

Loaded with detailed information, including various graphs, this is ideal for serious weather buffs. However, you can hide info you don't need and a MinuteCast option shows a hyperlocal forecast for your location.



Yahoo Weather
Free

This one looks stunning, with background photos to match your location and current condition – and, unlike some weather apps, no ads to clutter the view. Extra features include heat and wind maps.



head to head

Which sleep tracker can ensure you have the best night's rest?

SLEEPBOT VS SLEEP AS ANDROID

Both apps are free and work using your phone's accelerometer to monitor your sleep. We put both SleepBot and Sleep as Android to the test to see which ensured we got our forty winks.



» specification

Price **Free**

Designed for: Phone

Requires Android: Varies

» specification

Price **Free + IAPs**

Designed for: Phone

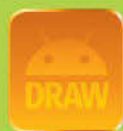
Requires Android: Varies

SleepBot

Sleep as Android



As well as using your phone's accelerometer, SleepBot uses a widget so you can turn tracking off when you're awake. You can also give your night's sleep a star rating.



Viewing sleep and snoring as a series of graphs and a running total of your sleep and wake hours, SleepBot is simpler than Sleep as Android but not as customisable.



Wakes you up gently at the optimal phase in sleep cycle nearest your preferred time to get up. Set multiple alarms so that your partner can get up at a separate time.



SleepBot supports a number of Android alarm clocks, so you don't have to give up using Sleepbot to track your sleep, including Gentle Alarm and Relax & Sleep.



Set Bedtime Reminders to encourage falling sleep, or if you're struggling, consult its troubleshooting section for advice. A widget makes on and off switching easy.

TRACKING

ANALYSIS

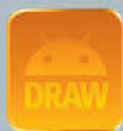
MORNING ALARM

INTEGRATION

EXTRAS



Sleep as Android can monitor your movements through your phone's accelerometer, but can also work with a Pebble smartwatch for a more accurate reading.



A graph displays how active you were through the night and details can be viewed as stats. Adding tags lets you track how your lifestyle, affects your sleep.



Also wakes you up in the lightest phase of sleep, but uses your music collection. Requires you to perform simple exercises to verify that you are awake.



The developer says it will work with Android Wear and Galaxy Gear soon. Also integrates with Philip Hue smartbulbs to switch off lights when you go to sleep.



As well as tracking your snoring, an optional 'anti-snore' feature vibrates to wake you up when it senses a high volume. Lullabies are available through IAPs.

And the winner is...



**SLEEP AS
ANDROID**

It was extremely close, but Sleep as Android gave the best experience. However, this wasn't just because it had the most features – the gimmicky nature sounds played against it – but it's data tagging let us assess how caffeine and exercise impacted our sleep.

EXPERT **Apps** REVIEWS WHEREVER YOU ARE

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DIGITAL



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 **Google play**

 **amazon**

 **zinio™**

 **nook™**
by Barnes & Noble

Implosion

Don your mech suit for an amazing adventure



From the moment you witness the ultra-polished intro sequence, you know you're in for a console-quality title with Implosion – Never Lose Hope. This is just as well considering the premium price tag. While the game is free to download and try out the first six stages, you'll need to shell out a one-off fee of £8.21/\$9.99 to unlock the whole thing. You get a lot of game for your money, though, as indicated by its hefty 1.1GB size.

Your battle-suit-wearing character (codename Avalon) is sent to investigate a post-apocalyptic Earth overrun by alien life forms. The hack-and-slash action is reminiscent of Devil May Cry as you tap rhythmically to rack up multi-hit combos on waves of mutants. It's pretty basic to start off with, as you hammer the strike button while performing the occasional dodge or special move – both of which need



Equip unlocked weapons and skills to your mech suit's limited slots



Rack up the hits and time your strikes to activate powerful combos

time to recharge a limited-ammo gun. As tougher foes arrive, things soon get a lot more sophisticated and the key to success lies in tactically timing your dodges and attacks. The combat system remains well-balanced throughout, as you gradually upgrade your mech suit and equip an arsenal of weaponry and special abilities via the ARK Kernel system. While there's an RPG-like strategy in selecting equipment for your suit's limited slots, the game is still mainly about

showcasing your combat skills, particularly when you are taking on the big bosses.

Limited revives are offered for each level which does help you along, although these will affect the final grade given for your performance at the end of each stage. Completing certain criteria also earns you badges to trade for upgrades and abilities. Later in the game, you can unlock the Crimson character who has her own set of equipment and skills that require a

slightly different style of play for you to get the hang of.

With some stunning visuals, quality voice-acting and an excellent soundtrack, it all adds up to an extremely compelling experience that is challenging enough to keep you busy for quite some time. It is well worth a purchase.

- » Price Free + IAPs
- » Designed for Phone and tablet
- » Requires Android 4.0



what we've been playing



Star Wars Rebels: Missions
Free + IAPs

Though its platform shooter format is hardly original, it's polished to perfection and we love piloting vehicles, wielding a lightsaber and battling bosses. Definitely one of the best Star Wars mobile games.



Fotonica £2.16/\$2.99

This endless runner has a unique audiovisual style and that keeps us coming back for another go. The split-screen two-player mode offers great competitive fun, too.



Recommend a game...

» **twitter**
@lgrobot



Postal

What's all the fuss about?



Google banned this conversion of the 1997 PC psychopath sim from the

Play store for being too violent, which is odd since it's no worse in that respect than the likes of GTA or Carmageddon. So, to get your bloodstained hands on it, you'll need to visit the Amazon Appstore (whose app you can install on any Android device). Whether it's worth the effort is another matter. Underneath all the gore and blood-curdling victims' screams, Postal is a pretty mindless dual-stick shooter. Selecting from an array of weapons at the bottom,



What a mess... and the game isn't much better

the aim is to wipe out the local population on each level. It's way too fiddly to play on a small phone screen, on which the enemies look tiny – you may need a magnifying glass to see them! Even on a tablet, foes are easily obscured by scenery,

icons or even your thumbs moving the on-screen sticks.

- » Price £1.34/\$1.99
- » Designed for Phone and tablet
- » Requires Android 4.0



Addictive gaming



Must Deliver

Free + IAPs

An endless runner come top-down shooter that offers some simple, addictive fun. You must avoid zombies or blast them with weapons and super moves. Dozens of unlockable characters add to the appeal.



Electro Rush

Free

This 3D reimagining of the classic Pong works surprisingly well. The Tron-style wireframe graphics look cool, while the tournament format and paddle/ball upgrades add to the long-term appeal.



Crowntakers

£4.49/\$5.49

This roguelike RPG features randomly generated worlds to explore and a separate screen for battles. One helpful touch is that on Easy difficulty, your characters retain their levels if you have to restart.



Playworld Superheroes

£2.99/\$3.99

An innovative aspect of this kid-friendly 3D action adventure is the ability to craft your own superhero suit before leaping into Playworld to take on alien invaders via simple gesture-based gameplay.



Brutus & Futée

£2.29/\$2.99

The two titular cartoon characters are nicely portrayed in this solid if shortish point-and-click puzzle adventure. Some solutions are a bit obscure, requiring repeated playing of the same scenes.



Masters of the Masks

Free + IAPs

From Final Fantasy creator Square, this original turn-based RPG features a unique battle system with characters' abilities based on the masks they wear. Sadly, it's marred by glitches and too many IAPs.



Driver Speedboat Paradise

More of a gold digger's paradise



Set in the world of the Driver console series, this speedboat racer features line-art characters and text dialogue. The racing is pretty basic as your boat accelerates automatically, you just need to steer and hit the brake pedal. There are plenty of ramps to fly off and perform stunts with midair swipes. Collectable nitros boost speed and let you take down rivals, but it's still all a bit dull.

Completing certain in-race feats earns you up to five stars, used to unlock new stages. You also win dollars to spend on new boats, upgrades and paint/decals customisation. However, to unlock some items you'll need to level up your lifestyle by buying clothes, furniture and houses!



Your boat's not all that fast until you hit the nitro boost

While dollars are easy to come by, you'll need gold for some things including fuel and skipping the wait for upgrade jobs. Top-ups for both currencies are available via IAPs.

- » Price Free + IAPs
- » Designed for Phone and tablet
- » Requires Android 4.0



Collect coins galore and activate power-ups to help you win

Sky Punks

Is it worth the hover bother?



Rovio's three-lane endless racer features hoverbikes (called Glidewings) instead of cars, ridden by cutesy characters on colourful courses.

Other than that, the simple, gesture-based gameplay is standard fare. Swipe left/right to avoid obstacles, up to jump or down to duck. If you do crash, you'll need to use a revive, costing you your hearts (or watch a video advert). Some of the stages involve racing AI opponents giving the action an edge.

At the end of each stage you're awarded up to three bonus stars based on various criteria – mainly the collecting of coins which are scattered around. Coins are needed to buy unlocked characters, bikes and upgrades and they can skip the wait after using energy charges.

- » Price Free + IAPs
- » Designed for Phone and tablet
- » Requires Android 4.0



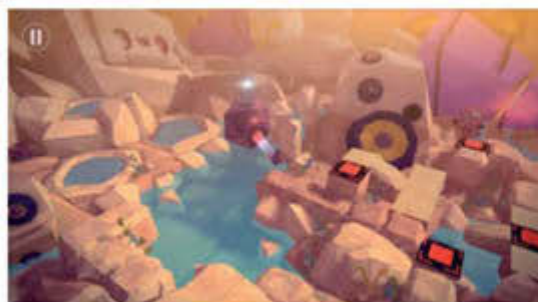
The Adventures of Poco Eco

An experimental puzzler with a truly musical flourish



Billed as a 'relaxing audiovisual experience', this puzzle adventure is a little off the wall. Its level designs are organic, as Poco navigates rocky paths. Tapping certain bits of scenery, such as giant subwoofers, plays different sounds to accompany the soundtrack. However, the main gameplay involves hitting switches to move things around and create a path forward. Even with Ledbug to guide you, it can prove bewildering – in the fourth level, we got stuck after missing a switch earlier in the level. It's worth persevering with and the game is ideal for puzzle fans after something different.

- » Price £1.49/\$1.98
- » Designed for Phone and tablet
- » Requires Android 2.3



First, you need to locate the sound amp to activate the switches

Corridor Z- The Zombie Runner

Be quick or be undead!

Z While this isn't the first zombie-filled endless runner, one unusual feature is the way you view your character from the front, with them running towards you as they're pursued by undead enemies. Another interesting aspect is that you need to pull down obstacles from the walls or ceiling to slow down the chasing horde. Green signs alert you to upcoming turns, while you also need to look out for collectable weapons and rations – the game's currency for upgrades which can be topped up via IAPs.

You get to play as three characters – a jock, a cheerleader and a soldier – escaping from a zombie-infested high school. Various objectives need to be met for each to reach the next classroom, such as running a certain distance or killing enough zombies. There are also occasional 'boss battles'. Different enough to stand out, Corridor Z is fun in short bursts.



The reverse viewpoint enables you to see your zombie pursuers

» **Price** Free + IAPs
» **Designed for** Phone and tablet
» **Requires Android** 4.0



Space Marshals

In space, no one can hear you yeehaw



If you like to go in all guns blazing, this Wild West sci-fi shooter likely ain't for you: it's more of a tactical affair involving much sneaking around, ducking for cover and strategic use of weapons. But it's no less fun for that.

The first of three episodes – all included in the price, the third being due in the summer – begins with a huge spaceship prison being hijacked in a jail

break. Awoken from cryogenic suspension, protagonist Burton and his fellow marshals Ava and Gavin, are ordered to investigate the nearby moon and recapture the dangerous fugitives.

The first mission sees you rescuing Gavin from a bandit camp. This is where you get your first taste of combat. The twin-stick controls, left for movement, right for aiming, work well, although we did occasionally find our thumbs

slipping off. Tapping the screen toggles between standing and crouching, enabling you to take cover behind rocks and other scenery. In true shootout style, you can then pop up to take potshots at the enemy. They're not dumb though, and will often wheel round to try to flush you out of cover. You can feel quite panicky when you are surrounded by foes, attempting to evade the laser sights of snipers, or taking on one of the armed-to-the-teeth bosses.

Getting shot reduces your shield, then your health – both replenished by scattered power-ups, as is ammo. You carry two firearms per mission, starting out with a standard shotgun and pistol. Extra weapons and items are unlocked via the post-mission performance-based rewards system, and using an assault rifle or crossbow can dramatically affect the style of play. Various grenades also come in handy, along with rocks to distract your enemies.

It all adds up to a supremely enjoyable game, complemented by super-slick visuals and some amusing wisecracking dialogue between the characters.



Take cover behind scenery during shootouts with the bandits

Joe Danger

It's wheelie a lot of fun!



An award-winning hit on PS3 and Xbox 360 consoles a few years back, Joe Danger finally rides onto Android in style. While the 60fps 3D graphics and presentation are top-notch, the simple gameplay is suited to mobile devices. Touch gestures are used to control Joe's bike as he zooms through 80 obstacle-strewn stages.

A tap makes him jump, a down swipe sees him crouch, while a left swipe does a wheelie to increase speed.

Each course has coins to collect which can be used to purchase a range of characters to use in bonus stages. In addition, up to three

hexagonal medals, required to unlock new sets of courses, can be earned on each stage of play.

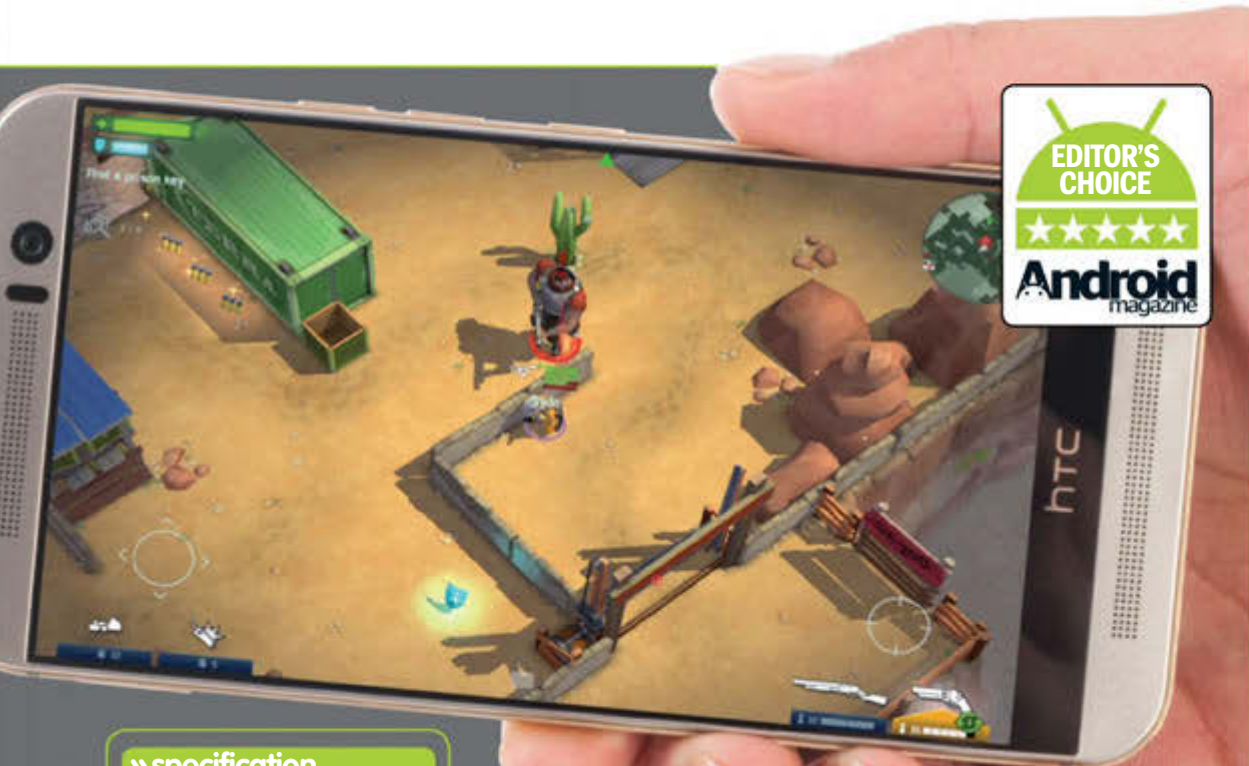
Joe Danger is loads of fun and there's also a daily challenge to keep you coming back.

» **Price** £2.29/\$2.86
» **Designed for** Phone and tablet
» **Requires Android** 4.0.3



Cute and colourful visuals help to kick-start a love for the game





» specification

Price £3.99/\$4.99

Designed for Phone and tablet

Requires Android 4.3

» verdict

Performance

Design

Value

As a tactical shooter, it's definitely one of the best in the West



2 hour wonder

Want your money back? You've got 2 hours to decide!



» **0-40 minutes** Enjoying some great shootouts already



» **40-80 minutes** The AI's smart and the bosses are really tough



» **80-120 minutes** New weapons introduce new strategies to the game

keep **refund**

The big bosses usually require a lot of hits to kill

» like this? try this!



Six-Guns: Gang Showdown
Roam the Wild West and take on unearthly enemies in this action-packed affair

Dragon Hills

Wreak havoc upon the land with your dragon



While many fantasy games see you battling fierce dragons, this intriguing title puts you in control of one, via the vengeful princess riding on its back. Actually, the way it slithers along and burrows into the side-scrolling, undulating landscape reminds us more of a giant worm. Still, there's plenty of fun to be had causing mayhem in the fully destructible environment, chasing tiny people and smashing their houses. Some folks are armed while other hazards include lava lakes, traps and spike pits. Occasional boss battles offer an extra challenge and help to break

up what is otherwise a fairly repetitive action.

Control is kept ultra-simple: just hold a finger on the screen to make the dragon burrow, then release to make it surface and leap into the air. You can only stay underground for a few seconds, however. The landscape is littered with collectable gold coins, used to buy upgrades and power-ups. IAPs offer extra gold and the removal of in-game ads. Easy to pick up and play, Dragon Hills is well worth a download.

» like this? try this!



DRAGON, FLY! » Similar one-touch controls as you make a cute baby dragon dive and leap from hills



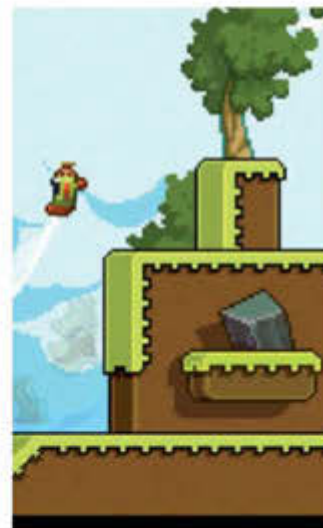
Keep on running, except when you need to jump a gap

» **Price** Free + IAPs
» **Designed for** Phone and tablet
» **Requires Android** 2.3



quickhits

5 top games for...
Infuriating fun



RETRY Free + IAPs

This retro-style game has an old-school difficulty level. Tapping the screen accelerates your plane, but also causes its nose to pitch upwards. Precision timing and patience are required to navigate narrow gaps.



Touchdown Hero Free + IAPs

You'll need amazing, Roger Craig-like agility to avoid being tackled by opponents as you run up infinite gridiron pitches, scoring touchdown after touchdown. A slow-motion feature helps, but not a lot.



Hardest Game Ever 2 Free + IAPs

Justifying its name, it offers a series of 48 shallow but frantic and insanely challenging mini-games. Super-fast reactions and mental skills are required to progress along its very steep difficulty curve.



Don't Touch The Spikes Free + IAPs

Spiked with difficulty, it has you tapping frantically to make the little bird jump repeatedly in midair while avoiding the deadly spikes that appear at the sides of the screen. Ouch!



Swing Copters Free

From the developer of the infamous Flappy Bird, this game is even harder! Guide a propeller-hat guy up past obstacles by tapping to flip direction and swing the opposite way. It will really drive you totally nuts.



Android magazine™ BUYER'S GUIDE

Discover the best smartphones, tablets and accessories to buy in our top ten charts



For the most up-to-date reviews, head to www.littlegreenrobot.co.uk
THE LATEST ONLINE INCLUDE... HONOR 4X » VODAFONE SMART PRIME 6 » ALCATEL ONETOUCH WATCH

TOP 10 SUPER SMARTPHONES THE BEST FLAGSHIP AND MID-RANGE ANDROID PHONES ON THE MARKET

1		Samsung Galaxy S6 Samsung have come out of fighting after the humdrum response to the S5, with this stunning handset made entirely of metal and glass. Samsung have had to sacrifice microSD support and removable battery to make it so thin and light to hold, but it offers a 13MP camera, wireless and superfast charging, improved fingerprint scanner and benchmark-beating processor instead.	£559.99  See issue 52	NEW ENTRY
2		LG G4 The LG G4 is a close second for the phone of the year behind the Galaxy S6, with a distinctive leather-back case and superior camera. It's unique Quantum IPS screen will amaze with images that are bright and crisp and offer vivid colours, while its 2TB microSD port offers lots of extra storage.	£549.99  See issue 52	NEW ENTRY
3		Sony Xperia Z3 Artfully crafted from glass and metal, the Z3 is not just stylish, it's also 100 per cent waterproof. Its 20.7MP camera is one of the most powerful we've seen and the PlayStation Remote Play feature will appeal to gamers. The launch of the Xperia Z3+ is also set to bring down the price of this older model.	£499  See issue 44	GOING DOWN
4		HTC ONE M9 We marked the M9 down for only being a very minor update on the (M8), but it is undeniably a superb phone. Underneath its elegant silver and gold chrome shell, it houses a superfast Snapdragon 810 processor, 20MP camera, 3GB RAM, 32GB memory and some clever customisation tools.	£579.99  See issue 50	GOING DOWN
5		Moto X (2014) The second-gen Moto X remains a contender for best phone, despite launching last year. It offers a stock Android experience with a 13MP camera, 15-minute Turbo charging, but is much cheaper than the Nexus 6, which has the same features. It's other specs are starting to look a bit dated though.	£395  See issue 45	GOING DOWN
6		Nexus 6 Google's first phablet, the Nexus 6 is larger than either a Galaxy Note 4 or OnePlus One. This can make it an awkward fit for one-handed use, but the gigantic 5.9-inch QHD display looks fantastic. It also has a super-fast processor and 3GB RAM for zippy use, along with a commendable 13MP camera.	£449  See issue 47	GOING DOWN
7		LG G3 Though its been superseded by the G4, the LG G3 continues to impress us with its pin-sharp QHD 5.5-inch screen, laser-focused 13MP camera and lightning-fast processor. However, its faux metal plastic casing is no comparison for the G4's leather back, and its mono speaker is disappointing.	£284.98  See issue 41	GOING DOWN
8		HTC One (M8) While the M9 has bumped the M8 down a peg in our chart, it remains a fantastic phone. An all-aluminium design, with a bright 1080p screen and critically-acclaimed dual BoomSound speakers. Not only has its price slashed with the launch of the M9, it can be upgraded to Android 5.0 as well.	£337  See issue 37	GOING DOWN
9		Samsung Galaxy Note 4 To look at, the Note 4 is a modest update on the Note 3, with a same-size display and continued emphasis on using the S Pen stylus. However, it has been revamped in almost every area. The TouchWiz interface handles better than ever, it has a 16MP camera and has an extra-long battery life.	£569  See issue 45	GOING DOWN
10		Honor 6 This 5-inch phablet is Huawei's attempt to win over the Western market. While the imitation iPhone design and skinned Android KitKat interface are a bit generic, it is positively packed with features, including a blazing octa-core processor, 1080p display and long-lasting 3,100mAh battery.	£249.99  See issue 47	

In case you missed it... **Amazing earbuds** Read more in issue 50

Trendz in-ear headphones

» Price £10/\$TBC
 » Website amazon.co.uk

While very cheap, these earbuds don't lose much in terms of quality. They sound a bit tinnier than the others but you don't lose clarity at all. The gold buds are a little garish for us, but the silver ones look a lot sleeker.



KS Hive Buds

» Price £24.99/\$TBC
 » Website kitsound.co.uk

A comfy pair of reasonably priced in-ear headphones with 11mm drivers that create a clear sound. The range isn't spectacular, but as long as you aren't listening to a thumping low bass, you will have a good experience with these.



RHA T10 earphones

» Price £139.95/\$189.95
 » Website rha-audio.com

The RHA T10 have a very premium finish, with stainless steel earphones and customisable earbuds. Overall sound quality and noise-cancelling is top notch, but we found the metal finish makes them quite heavy.



Sennheiser CX 5.00G

» Price £69.99/\$89.95
 » Website maplin.co.uk

The Sennheiser CX 5.00's ergonomic earbud design makes for an incredibly comfortable listening experience. Secure, comfortable and great quality music playback, these are definitely worth the money.



Buyer's Guide

TOP 10 BUDGET BUYS IF YOU'RE SHOPPING FOR A SMARTPHONE ON A SHOESTRING, CHECK OUT THESE LOW-COST MOBILE MUST-HAVES

1		ZTE Blade S6 While its price puts it at the top-end of what we would call a 'budget phone,' the Blade S6 is the best ZTE Blade in years. It runs Android Lollipop, has a 64-bit Snapdragon processor, 2GB RAM and the exact same IMX214 camera as the Sony Xperia Z3 – which costs around three times as much! It's overall iPhone-inspired design is a bit boring, but at 7.7mm, it is surprisingly slender handset.	From £189.99  See issue 50	NEW ENTRY
2		Moto G 4G (2015) The third generation of the Moto G 4G, it is the same shape and size of the Moto X (2014), with a 5-inch screen, booming dual speakers and customisable rear case. As well as offering 4G connectivity, it is packing an 8MP rear camera, near stock Android 5.0 and boosted 2390mAh battery.	£105.69  See issue 51	NEW ENTRY
3		Moto G (2014) If superfast 4G connectivity isn't a priority for you, the Moto G offers many of the same features as the Moto G 4G (2015) but for slightly less money, including the camera, speakers and option to upgrade to Android 5.0. It also includes a Snapdragon 400 quad-core and dual-SIM support.	From £129.92  See issue 44	GOING DOWN
4		Moto E (2014) Available for under £100, SIM-free and no contract, the Moto E is the ultimate no-strings-attached smartphone. With a sturdy, splashproof case, 1980mAh battery that will go the distance and microSD slot to expand the tiny 1GB memory, the Moto E is an impressive build that won't break the bank.	£65  See issue 40	GOING DOWN
5		Asus ZenFone 5 While it is one of the most expensive phone in our budget buys chart, the ZenFone 5 offers an awful lot for less than most mid-range phones. A stylish metal design is available in a range of colours, it has a sharp 5-inch screen, powerful Intel Atom processor, and 8MP shooter with a range of modes.	£129  See issue 48	GOING DOWN
6		Sony Xperia M2 Aqua Just like Sony's flagship Xperia Z3, this midrange marvel is waterproof to at least up to 1.5 metres. Sony's other top feature is here as well, with an 8MP rear camera and a suite of photography tools. The only downside is that, after you factor in all the preloaded apps, it only has 4GB's of storage.	£125  See issue 48	GOING DOWN
7		Honor Holly The low-end alternative to the Honor 6, the Holly manages to offer 16GB storage, an 8MP camera, a five-inch HD screen and dual-SIM with only a double-digit price tag. However, you get what you pay for though, as the build quality feels quite cheap and it only runs Android 4.4.	£89.99  See issue 50	NEW ENTRY
8		HTC Desire 510 At 4.7 inches, with a budget price tag and LTE connectivity, this is HTC's answer to the Moto G 4G. However, cost-saving measures such as a 5MP camera and poor screen quality, mean it just can't compete. HTC's Sense 6 UI is still here though, offering one of the best custom interfaces for Android.	£126  See issue 44	GOING DOWN
9		Samsung Galaxy Ace 3 While Samsung's high-end handsets get a lot of attention, the company has a much broader range. The Galaxy Ace 3 has been superseded by the Ace 4 now, so we might have hoped the price might have dropped further, but it still offers a few impressive features, including 64GB microSD support.	£97.69  See issue 34	GOING DOWN
10		Honor 3C This frugal 5-inch phablet is a bit behind the times running Android Jellybean and only offering 3G signal and 8GB storage. However, a 2MP front-facing selfie camera, generous 2GB RAM, expandable memory and dual-SIM support help to make this a great phone for first time users.	£89.99  See issue 49	GOING DOWN

In case you missed it... **Racing games** Read more in issue 50

Daytona Rush

» Price Free



Like stock car racing for the small screen, Daytona Rush is a mix between a racing career game and an endless runner. Drive your car around the famous Daytona Speedway circuit until you crash, earning points for completing challenges. It's very basic though.



Taxi Driver Mania 3D Racing

» Price Free + IAPs



Like a mobile version of classic console game Crazy Taxi, the aim of the game is drive your taxi around the city picking up fares and dropping them off as fast as possible to earn cash to upgrade your car.



Trial Xtreme 4

» Price Free + IAPs



Prefer two wheels to four? Take the motocross challenge in this career game. It can be frustrating when you keep on crashing time after time, but is a lot of fun. For added carnage, it also includes online multiplayer.



Real Drift Car Racing Free

» Price Free + IAPs



A lite version of the £0.71/\$0.99 game, it still does exactly what it says on the tin. Earn points for drifting and money for winning races to customise your virtual motor.



TOP 10 BEST TABLETS

WHETHER YOU'RE LOOKING FOR A SEVEN OR TEN-INCH DISPLAY, THESE ARE THE TOP TABLETS AVAILABLE ON ANDROID

1		Sony Xperia Z3 Tablet Compact With its 8-inch screen and premium price tag, Sony is pitching the Z3 squarely against the iPad Mini in a bid to compete with its rivals. Weighing just 270g, it is slim and slender with a stylish minimalist design that belies the blazing processor and 3GB RAM under the hood. Its Triluminos display can give Samsung's Super AMOLED screens a run for their money and works fantastically with Sony's PS4 Remote Play feature so you can enjoy console-quality games on the go.	From £269  See issue 46	
2		Google Nexus 9 A mighty Nvidia Tegra K1 processor and 3GB RAM mean that even running the most graphic-heavy games won't slow this 64-bit tablet down. The built-in BoomSound speakers also offer great sound quality, making Google's new tablet an all-round media consumption device.	From £267.99  See issue 45	
3		Samsung Galaxy S Tab 10.5 Ultra thin and ultra bright, colours look vibrant and details distinct on this powerful Super AMOLED screen. Samsung's iPad slayer also puts many other Android tablets to shame, with a multi-window mode to display several apps at once and octo-core processor ensuring lightning-fast performance.	£349  See issue 43	
4		Sony Xperia Z2 Tablet Arguably one of the most portable 10-inch tablets available, the Xperia Z2 Tablet is waterproof and can support a SIM card for 4G use. It is also surprisingly thin and light to carry, and includes power-saving modes to ensure longer battery life. Reasonably high-spec, it has a whopping 3GB RAM.	£329.95  See issue 39	
5		Tesco Hudl 2 This sequel to the supermarket chain's own-brand tablet can't compete with premium models, but sets a new benchmark for budget tablets. Upping the display size from 7 to 8.3-inches, the Hudl 2 also runs Android 4.4.2 KitKat and can handle anything you throw at it thanks to an Intel Atom processor.	£99  See issue 44	
6		LG G Pad 8.3 A well-rounded tablet, the LG G Pad 8.3 offers solid specs with a selection of impressive built-in apps. These include Polaris Office so you can write documents on the go, and QPair, which shares your smartphone notifications to your tablet so you never miss important updates.	£169.99  See issue 40	
7		Samsung Galaxy TabPRO 8.4 Wi-Fi The smallest tablet in Samsung's collection, the TabPRO 8.4 proves that good things do come in small packages. A stunning 359ppi screen puts the Nexus 7 to shame, though we'd prefer higher-quality speakers. However, an 8MP camera and intuitive interface are good compensation.	£199  See issue 38	
8		Archos 101 Oxygen This wedge-shaped tablet is seemingly tilted to give you a better angle for watching videos, plus a mini-HDMI port to connect it to your TV. But we're not sure why as it has a spacious 10-inch screen of its own, with full HD display and good viewing angles. Speedy ARM Cortex A17 CPU is a bonus too.	£169.99  See issue 38	NEW ENTRY
9		Alcatel OneTouch Pixi 7 This 7-inch tablet can't be faulted for its price, which is one of the most affordable on the market. It runs Android KitKat 4.4, offers 1080p video playback and has a triple-core processor. It's also incredibly lightweight for added portability, but lacks memory with only 4GB RAM.	£55.91  See issue 48	
10		Amazon Fire HD6 Despite only having a 6-inch display and a budget price tag, the Fire HD6 is a decent tablet for watching movies and listening to music. However, the inferior forked OS and lack of third-party app support make the Fire HD6 hard to recommend for regular let alone heavy-duty use.	£79  See issue 46	

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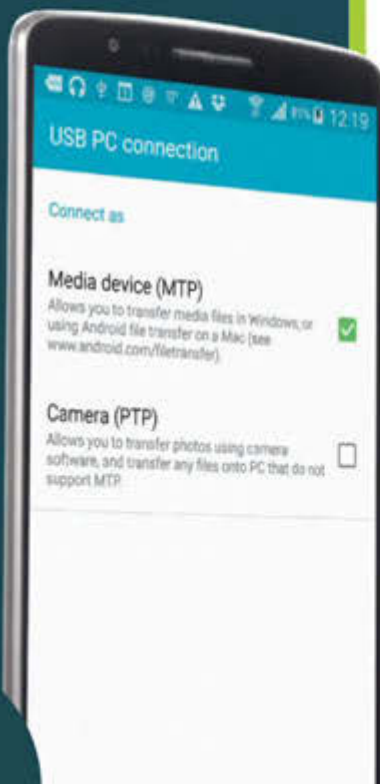
Imagine launches entire magazine portfolio on Readly

Pioneering worldwide specialist content publisher joins forces with 'the Spotify of reading.'



Did you know?

You can save snapshots of web pages on an Android device by installing Websnap-Web capture, Web widget from Google Play. It lets you save the snapshot to your home screen and to then set up refresh intervals to see what is happening at any time without using the browser.



Why am I unable to see my videos?

"I take a lot of photos and videos on my Galaxy phone, but for some reason the videos never show up when I connect it to my Mac. All of the photos are there and can be used, but no matter what I have tried, the videos just don't display."

Matt Cluwes

A **Hi Matt.** This problem is actually quite common and hopefully we will be able to rectify it for you.

You haven't said what software you are using on your Mac, but we will presume that it is either Android File Transfer or Samsung Kies. It doesn't really matter, however, because the problem is likely to be on the phone itself. When you connect to your Mac, pull down the notification drawer at the top and you will see a notification that the device is connected via USB. Tap the notification and select MTP at which point your Mac, and the associated software, should see all of your photos and videos because it will view them as files. It sounds counter-intuitive, but selecting Camera (PTP) can actually stop videos being recognised because it would appear that the computer sees it as a standalone camera only capable of showing still photos. If you continue to experience problems, which is highly unlikely, try using different software on your Mac to view the photos. In our experience, Android File Transfer

Changing one setting can solve the problem

is extremely reliable provided you have the right drivers installed, but you will probably need to uninstall Samsung Kies to get it to work. These two apps do not work particularly well

together and so choosing one or the other is the best bet. When you want to go back to seeing just your photos, which can be quicker, simply connect again and change the USB settings.

If your PC sees your device as a camera, you may only see your photos



Ask your questions

Got a problem with your Android phone or tablet?
Send it to us and we'll find the solution

» facebook

/littlegreenrobot
Get help from our
Facebook community

» email

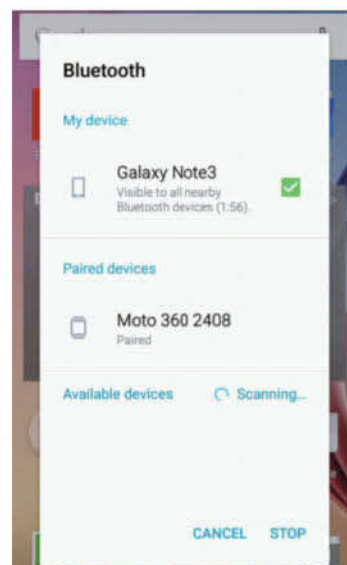
qa@littlegreenrobot.co.uk
Send your questions for our team of
experts to tackle

Can I use two Bluetooth devices simultaneously?

"I want to use two Bluetooth devices on my phone at the same time, but so far I have struggled to get them working together. When one connects the other drops off and vice versa. Any ideas what I am doing wrong?" *Melanie Sodie*

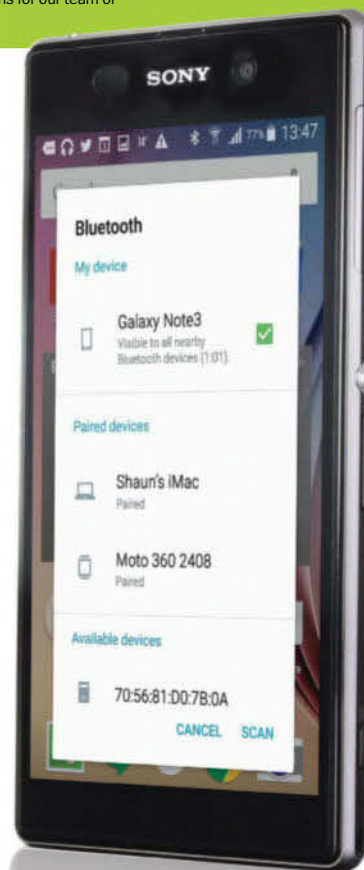
A Hi Melanie. You're doing nothing wrong as this is a confusing area and debates continue as to what's allowed and what's not. You can pair your phone with as many Bluetooth devices as you like because there is no theoretical limit. The problem, comes when you try to use two devices at the same time, but even that doesn't always offer a consistent outcome. Android users have reported success using a keyboard and mouse on a phone at the same time which are connected via Bluetooth, but it depends on the hardware you

are using and the accessories you're trying to connect. As a standard, Bluetooth should now be able to connect and run two devices, as has been demonstrated on iPhones, but it still remains fiddly on Android. You could dig deeper and set up different UDIDs for each device that you want to connect which goes some way to solving the problem, but we think the best way to get it to work is to use trial and error with accessories until you hit the jackpot. Don't forget that you can use an OTG adaptor as well on many phones to connect accessories via USB,



When you scan for Bluetooth devices, multiple matches may appear

which would free you up to use Bluetooth for the second accessory. This may be the quickest and most practical way until the technology makes connections more reliable.



You can pair as many devices as you need to

hints & tips

Get more from your Android phone with our handy hints

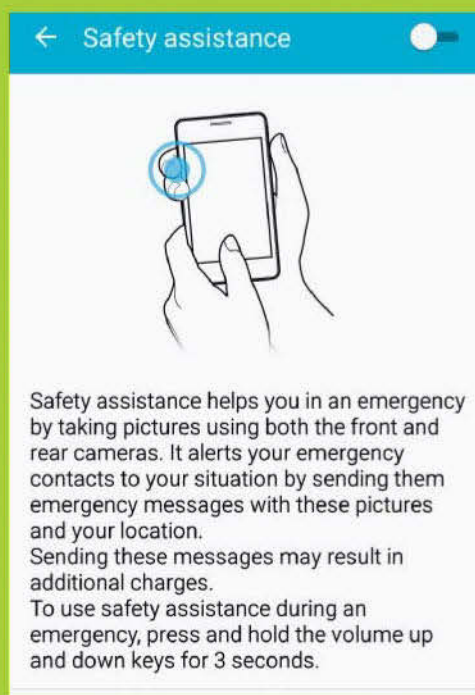
Test your Wi-Fi connection

1 If you are connected to Wi-Fi but you can't use the internet, go to Google Play and download Terminal Emulator. Type -c5 74.125.224.72 to ping Google's servers five times. If it works, troubleshoot elsewhere.



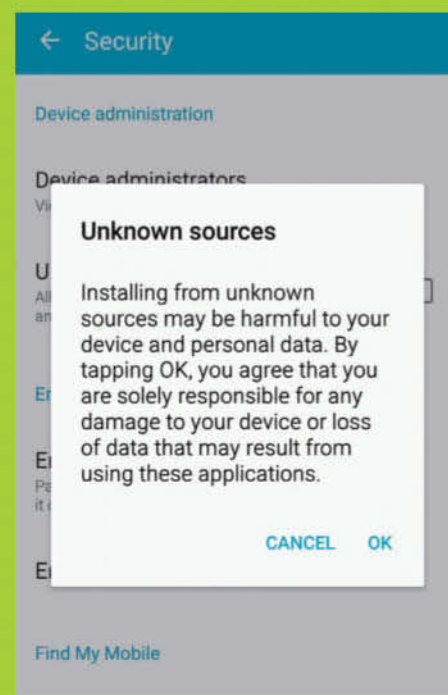
In an emergency...

2 Some phones let you send photos from the front and back cameras to specific contacts in an emergency. It's usually found in Settings>Device and is worth setting up in case you hit a problem.



Unknown sources

3 The Unknown sources option in Settings can be useful if you're downloading and installing an app that you know is harmless, but at all other times it's important to make sure it is disabled.



Should I speed up my phone?

My phone is beginning to get really slow and I have started testing apps that claim to speed up devices by closing apps running in the background. They do not seem to be helping much though so any advice would really be appreciated.

Morgan O'brien

A **Hi Morgan.** The problem with many task management apps is that they tend to kill running apps which often open themselves up again automatically. This means that you never reach the point where the app is shut and

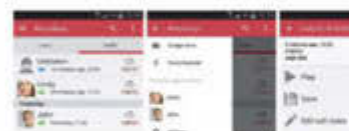
when they continually cycle through opening and closing, all you are doing is wasting battery life and using even more system resources. There is an app, however, called Greenify which is available from Google Play, that will freeze apps and stop them from opening again, thus giving you a much smoother experience. It works well on older Android devices and in our tests has proved to be very beneficial. Also, remember that you can close any app manually in seconds and also turn off features when they are not needed. A little bit of housekeeping now and again can remove the need for an app.

Can I record phone calls?

Hello! Can I record phone calls on my HTC phone and save them as files? There are times when I make calls to companies and it would be useful to have a recording of what was actually said, but I need to know how to do it and if it is even legal?

Helen Berg

A **Hi Helen.** There are many apps available to help you record calls and Automatic Call Recorder from Google Play, is a good example. It lets you record both parties and save them as files for sharing later, but the developer does warn that the quality of the recording will depend on the device it is used on. We should, however, discuss the rules involved when recording calls – it is perfectly legal to record a call from your personal device provided it is for your own use and you do not have to let the other party know that you intend to record the call. If you do intend to share the call, you should advise the other party



You can record calls, but there are rules that you should follow

that the call is being recorded and you cannot share a call that contains information that could be considered private. Saving a recording of a phone call often makes sense because it can stop any problems with miscommunication in the future, but you will need to consider if you plan to share the recordings.

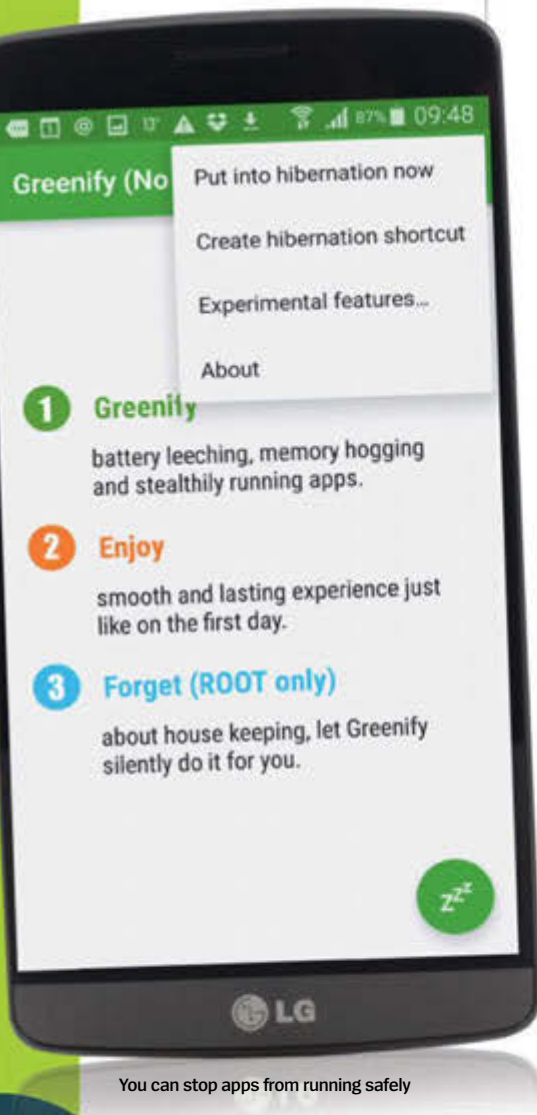
“Ripped CD tracks will likely have different volumes”

My songs play at different volumes?

A Hi there. I am starting to get really annoyed because my phone is playing back songs at different volumes and I am having to constantly adjust the sound between songs. Is there a way to make the volume identical for every track on my phone so that I can stop fiddling every time, and why does it happen in the first place? **Jack Dobson**

Hi Jack. This can be a frustrating experience which is usually caused because your tracks have been sourced from different places. For example, ripped CD tracks will likely have different volumes compared to those downloaded and purchased from the internet and there is no way to tell until you start playing them. We have detailed a process you can use to normalise all of your MP3 tracks so that they have the same volume and play exactly as you want them to. It will take some time to convert all of your tracks but it is a one-time thing so once completed you should not need to touch it again. We would suggest checking downloaded tracks from your preferred source in the recommended app so that you can match converted songs to those. This means that future downloads should stay consistent with the rest of your converted collection.

You can normalise the volume of your music tracks in one process



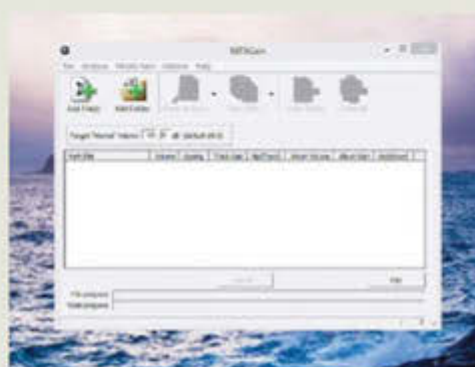
You can stop apps from running safely





Did you know?

Some apps send notifications without your permission and it can be hard to work out which one is the culprit. If, however, you download AirPush Detector from Google Play, you will be able to track down which apps are sending them and delete as required.

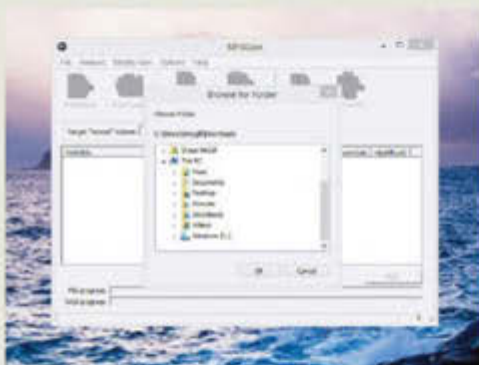


1 Download an app

Go to bit.ly/1eiiBCW on a PC and tap the Downloads tab to download the MP3Gain app – ideally, choose the full installer for the best results. It is completely free and has been used for many years by thousands of people. Install it as normal and wait for the process to complete.

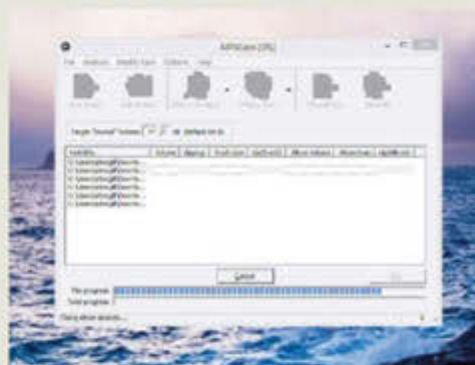
2 A simple screen

Once installed, open the app and you will see a small box on your screen. There are not too many controls to deal with and the ones that are present are all obvious in what they need to be used for. Notice the top-left icons which is where you will start.



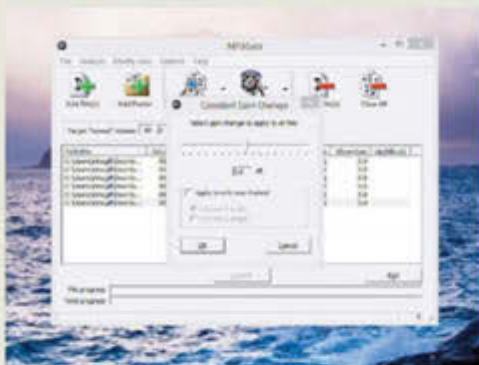
3 Choose some tracks

Tap the Add Folder icon and then select a folder where your music tracks are stored. Using the folder option is much quicker as you can deal with many tracks at the same time. The MP3Gain app is capable of analysing and converting hundreds of tracks at the same time.



4 Time to analyse

Select some of the tracks from the folder you chose and tap the Album Analysis icon at the top. The app will now analyse the songs and present the results in the main table. You will see the current volume for each track and the intended album volume to normalise all of them.



5 Normalise the volume

You should now tap the arrow next to Album Gain and then choose the Album Gain option. The app will now scroll through each track and show the new volume for each track in the middle table. Notice how they are now all the same volume which is exactly what you need.

6 Transfer the files

All that is left to do is transfer the files to your device using your normal method. The actual files will have been changed and their information tweaked, so the new volume is embedded into each for standard playback. Once completed, all of your songs will have the same volume properties.

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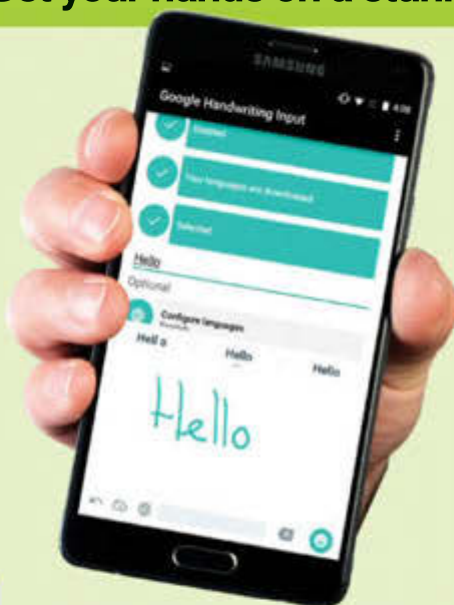
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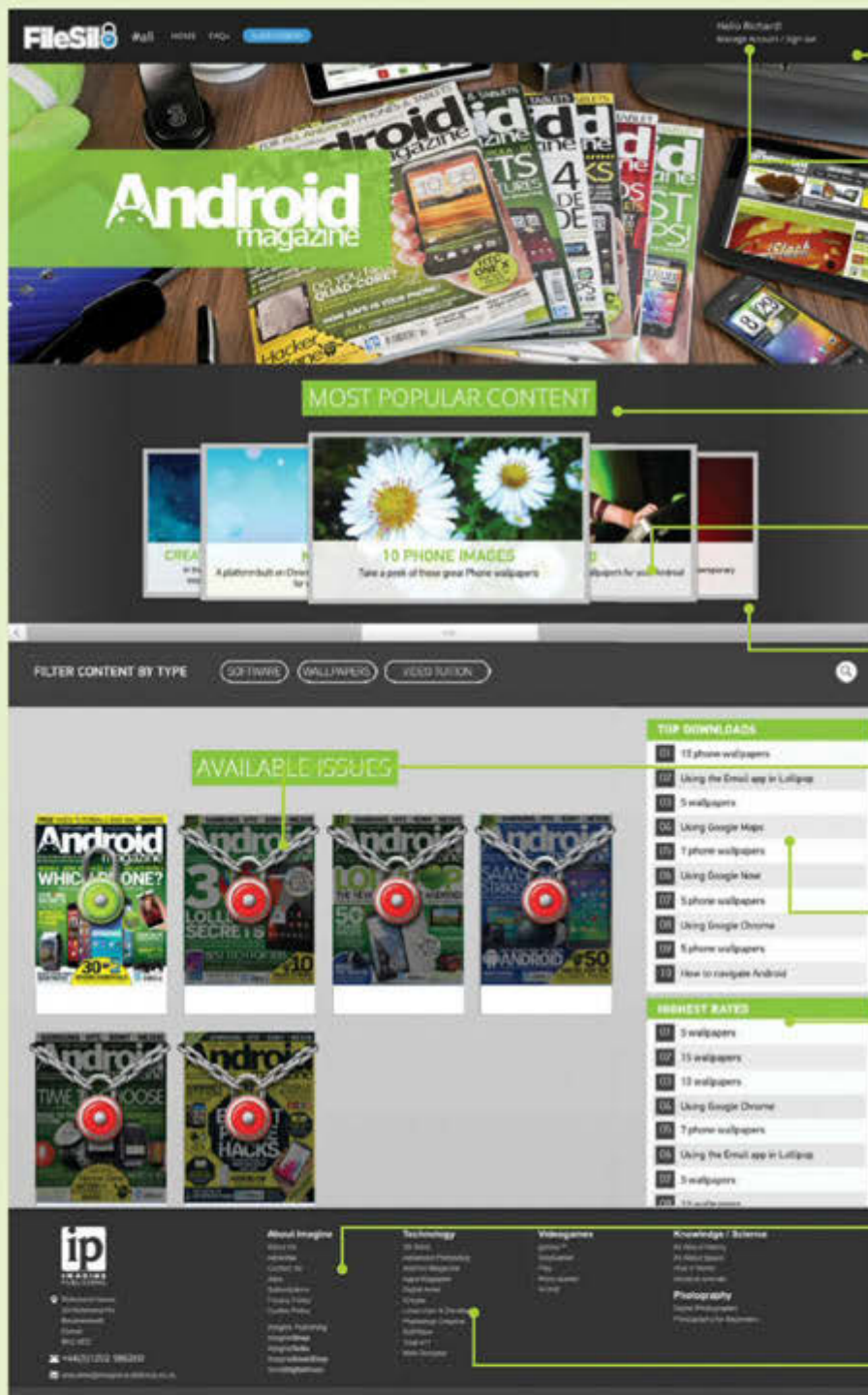
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